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STATE REGULATION OF NON-COAL SURFACE MINING

A SUMMARY AND COMPARISON OF STATE PROGRAMS



Prepared By: C. Ronald Bloom
Office of Science and Natural Resources
National Conference of State Legislatures



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- To foster interstate communication and cooperation.

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PART I
EXECUTIVE SUMMARY

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This report is designed to contribute to the President's Council on Environmental Quality's study of methods for "effective and reasonable" regulation of surface mining of minerals other than coal. It summarizes the current regulatory posture of non-coal surface mining programs in each of the fifty states. The report is concerned only with statewide regulation to control the adverse environmental consequences of present and future surface mining.

Information for this report is derived from analysis of state statutes and regulations, and from a telephone survey of state officials knowledgeable about the regulatory program in their state.

Of the forty-two states that regulate surface mining on a statewide basis, all but five regulate minerals other than coal. In at least four states not now regulating minerals other than coal, there is a reasonable likelihood of future regulation. Thirty-five states now require that an operator obtain a permit from a state agency before engaging in the surface mining of certain minerals other than coal. All states regulating surface mining specify reclamation standards which must be met by the operator, and in almost all instances the operator must obtain prior approval of his plan for reclamation of the lands to be affected by surface mining.

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PART II
INTRODUCTION

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The Federal "Surface Mining Control and Reclamation Act of 1977" (P.L. 95-87) established a national program for regulation of the surface mining of coal. Section 709 of that Act called for a study "designed to assist in the establishment of effective and reasonable regulation of surface and open pit mining and reclamation for minerals other than coal." This report is designed to contribute to that study.

The purpose of this report is to summarize the major elements of each state's program for regulating the surface mining of minerals other than coal. It is important to define its parameters. The report deals only with statewide regulation of surface mining. Regulation of surface mining by local governments is not discussed unless such regulation is specifically mandated by state government (e.g. California). Mining, like other economic activities, is subject to a variety of state and federal environmental protection laws. However, unless provisions of state environmental laws are directed specifically at surface mining (e.g. Wyoming, Maine, Vermont) such regulation is not discussed in this report. There is no detailed discussion of regulations applicable only on state lands or in certain regions of the state; e.g. wetlands, wilderness areas. While most states regulate mining for the purpose of protecting the health and safety of miners and others on the site, such regulation is not discussed in this report. In addition, this report focuses on regulation of current and future surface mining activity, and does not deal directly with state programs designed to accomplish reclamation of previously mined lands.

In order to compile the information presented, two methods were used. A statutory search was conducted to identify the legal basis, if any, for regulation. In addition, contacts were made with state officials in each state who are knowledgeable on this subject. Initial contacts were usually those identified in a 1978 National Conference of State Legislatures' study of state regulation of the surface mining of coal. In many instances, the initial contacts referred to other individuals more knowledgeable about regulation of other minerals. In the case of states not covered by the earlier report, contact was made with individuals in the state's environmental protection and/or natural resources agencies.

The information gathered is presented in two sections. First, in Part III, a considerable amount of comparative information is presented in the form of a matrix highlighting many of the major elements of the regulatory program existing in each state. The format of the matrix was influenced by two previous studies dealing with state regulation of surface mining: the previously mentioned NCSL study, and a 1975 study conducted by the U.S. Geological Survey entitled A Guide to State Programs for the Reclamation of Surface Mined Areas. Finally, Part IV provides a summary of each individual state's regulatory program. This material provides detailed information unavailable in the matrix, and should enable the reader to understand the general provisions of the regulatory program in each state. The state profiles also highlight unusual features of the state program, which the interested reader can explore in more detail to determine their possible application in other states.

Before proceeding to the body of this report, a few comments about emerging trends in regulating non-coal surface mining maybe helpful. In four

states, a commission or other committee is studying the regulatory program covering minerals other than coal, and is likely to make recommendations to the legislature involved. The Mineral Resources Sub-Committee of the Governor's Commission on Arizona Environment is considering the need for development of a state minerals policy. Illinois law requires that an Aggregate Mining Problems Study Commission report to the 1981 legislature regarding the desirability of separate legislation to cover aggregate mining. In Louisiana, the House Natural Resources Committee will study the desirability of state regulation of sand and gravel extraction. The North Carolina statute regulating surface mining is due to expire in 1981 under the state's sunset provisions; the legislature will consider the recommendations of a state evaluation commission in determining the future of the law.

In addition to these formal studies, contacts in three states suggested the possibility of significant statutory changes in the near future. Legislation is being drafted within the executive branch in Delaware to provide state guidance to the existing local regulation of surface mining. In Florida, it is likely that the Governor will again recommend a more conventional approach to surface mining regulation than the existing system of severance tax rebates for reclamation expenses. Finally, in Kansas, a statute governing construction materials may emerge as a result of an initiative recently begun by operators. In other states only minor changes, including streamlining and clarifications, appear likely.

PART III

MATRIX

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INTRODUCTION TO MATRIX

The matrix that follows provides a summary of the fifty states with respect to their regulation of surface mining of minerals other than coal. For each state, the program is measured along thirteen dimensions, listed on the left hand side of the matrix. The meaning of each element in the matrix is described in the "Guide to the Matrix" which follows the "Summary of Matrix."

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SUMMARY OF MATRIX

Eight states do not have a statewide regulatory program applicable specifically to surface mining. These include four eastern states where little surface mining occurs (Connecticut, Delaware, New Jersey, and Rhode Island), three western states with substantial mining activity and large amounts of public lands (Alaska, Arizona, and Nevada), and the state of Nebraska.

Five States (Kansas, Louisiana, Massachusetts, New Mexico, and North Dakota) regulate the surface mining of coal, but the governing statute is not applicable to other minerals.

Thus, thirty-seven states have a statutory basis for regulating the surface mining of minerals other than coal on a statewide basis. All but two of these statutes require that an operator obtain a permit from a state agency prior to engaging in surface mining. The two exceptions are Florida and Michigan, both of which specify reclamation standards to be met by the operator, and require submission of reclamation plans to the state agency. Rather than providing penalties for failure to comply, the Florida statute provides severance tax rebates for those operators who meet reclamation standards. Alabama is unique in terms of requiring a permit, but not requiring advance approval of a reclamation plan; the operator must meet specific reclamation standards, however.

The permitting statutes of three states are sufficiently different from the rest to merit mention. California's permits are granted by local governments within the context of state policy. In Maine and Vermont, permits are granted within the context of statutes regulating the location of all developments having major impact on land resources.

Seventeen statutes regulating the surface mining of minerals other than coal cover all minerals. Seven of the statutes apply to all minerals except coal. The remaining thirteen statutes apply to some minerals other than coal, but not to all such minerals.

Fifteen of the states regulating surface mining of minerals other than coal provide for the possibility of a public hearing prior to granting of a permit.

Thirty-five of the thirty-seven states regulating the surface mining of minerals other than coal require the operator to file some form of bond or security before engaging in the mining activity. Release of the bond is typically conditioned on successful reclamation and faithful compliance with all the requirements of the statute, rules and regulations adopted thereunder, and any conditions attached to the permit. Ten states provide for release of part of the bond prior to completion of all requirements relating to the land covered by the bond.

All the states regulating surface mining specify reclamation standards, either by statute, rules and regulations, or a combination of the two. The standards differ considerably in specificity, and often vary depending on the minerals covered by the law and the most important environmental concerns potentially affected by mining in the particular state. Of the six categories

of standards listed in the matrix, thirty-five states refer to grading and revegetation standards, thirty-one express a specific concern about water, twenty-five regulate toxic wastes, twenty-two address topsoil, and eleven mention highwalls.

Seven states have established procedures for advance designation of areas unsuited for surface mining (Idaho, Minnesota, Mississippi, South Dakota, Texas, West Virginia, and Wisconsin). In many additional states a permit could be denied for the same reasons that justify designation as an area unsuited for mining in the seven above.

Seven states provide for the possibility of reclamation of areas previously affected by surface mining instead of comparable areas currently being mined (Alabama, Colorado, Florida, Georgia, Mississippi, Missouri, and South Carolina).

Fourteen states specifically require permits for exploratory activities, although only half of them require a separate exploration permit (Mississippi, Montana, New Hampshire, South Dakota, Tennessee, Wisconsin, and Wyoming). Two additional states require that the prospector provide notice to the state of exploratory activities.

Nineteen statutes cover the significant surface effects of underground mining. In some of these cases, the statute applies to all mining, including underground mining, while in others the coverage of surface mining law is extended to the significant effects of underground mining.

GUIDE TO THE MATRIX

1. Statute

A - A surface mining reclamation statute exists covering minerals other than coal.

B - A surface mining reclamation statute exists, but covers only coal.

2. Rules

X - Rules, regulations, or guidelines have been promulgated under a statute applicable to surface mining of minerals other than coal.

3. Coverage

A-covers all minerals.

B-covers all minerals except coal.

C-covers only metallic minerals.

D-excludes specific minerals from coverage.

E-includes only specific minerals.

4. Staff

- This is the estimated number of full-time equivalent state employees devoted to administration and enforcement of the surface mining reclamation statute as it pertains to minerals other than coal.

5. Permit

X - A permit must be obtained in order to engage in surface mining of certain minerals other than coal.

6. Reclamation Plan

X - Surface mine operators must submit a plan for reclamation of lands affected by the extraction of certain minerals other than coal.

7. Hearing

A - A public hearing must be held before a permit for the surface mining of certain minerals other than coal can be issued.

B - Although not required in all circumstances, the statute provides for the possibility of a public hearing prior to issuance of a permit for the surface mining of certain minerals other than coal.

8. Bond

X - The statute applicable to surface mining of minerals other than coal provides for the posting of bond, under certain circumstances, conditioned on faithful execution of his duties under the statute.

a. Amount

A - The amount of the bond required is established on a case-by-case basis, usually depending on the estimated costs of successful reclamation.

B - Although the amount of the bond required is established on a case-by-case basis, it is subject to monetary limits specified in the statute.

C - The amount of the bond required is specified in the statute.

b. Partial Release

X - The operator is entitled to release of a portion of his bond before the final completion of his reclamation effort on specific lands has been assured.

9. Reclamation Standards

X - The specific reclamation standard applicable to surface mining of minerals other than coal is identified in the statute or, if the statute is silent with respect to establishing reclamation standards, the specific reclamation standard is addressed by the current rules and regulations adopted pursuant to the statute.

10. Exclusion of Mining

X - Provisions of the statute applicable to surface mining of minerals other than coal provide for advance designation of lands unsuitable for surface mining, and no surface mining of certain minerals other than coal is permitted on lands so designated.

11. Substitute Lands

X - Provisions of the statute applicable to surface mining of minerals other than coal permit the operator, under certain circumstances, to fulfill his reclamation duties by reclaiming lands previously affected by mining rather than those affected by his current surface mining operations.

12. Exploration Permits

A - Provisions of the statute applicable to surface mining of minerals other than coal require that a separate permit be obtained to engage in exploration activities affecting the surface of the land.

B - Although no separate permit is required in order to engage in exploration for minerals other than coal, exploration is defined as mining, and requires a mining permit.

C - No permit is required to engage in exploration for minerals other than coal, but the prospector must file a notice of intent to engage in exploratory activities.

13. Surface Effects

The statute applicable to surface mining of minerals other than coal also applies to significant surface effects of underground mining.

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MATRIX

	ALABAMA	ALASKA	ARIZONA	ARKANSAS	CALIFORNIA	STATES	COLORADO	CONNECTICUT	DELAWARE	FLORIDA	GEORGIA
<u>PROVISIONS</u>											
1. Statute	A			A	A		A			A	A
2. Rules	X			X	X		X			X	A
3. Coverage	D			A	A		A			A	D
4. Staff	3-4			1	9		7-8			6	8
5. Permit	X			X	X		X				X
6. Reclamation Plan				X	X		X			X	X
7. Hearing					A		B				
8. Bond	X			X	X		X				X
a. Amount	C			A			A				B
b. Partial Release											
9. Reclamation Standards											
o Water	X			X	X		X			X	X
o Topsoil					X		X			X	X
o Grading	X			X	X		X			X	X
o Highway											X
o Toxic wastes	X			X	X		X			X	
o Revegetation	X			X	X		X			X	X
10. Exclusion of Mining											
11. Substitute Land	X						X			X	X
12. Exploratory Permits					B		C				
13. Surface Effects					X		X			X	

PROVISIONS	STATES									
	IDAHO	IDAHO	ILLINOIS	INDIANA	IOWA	KANSAS	KENTUCKY	LOUISIANA	MAINE	MARYLAND
1. Statute	A	A	A	A	A	B	A	B	A	A
2. Rules		X	X	X			X		X	
3. Coverage	D	A	A	E	B		E		A	B
4. Staff	0	2-3	3-4	1	1		10		0-1	5
5. Permit	X	a	X	X	X		X		X	X
6. Reclamation Plan	X	X	X	X	X		X		X	X
7. Hearing		B	B							
8. Bond	X	X	X	X	X		X d		X	X
a. Amount	B	b	B	B	A		B d		A	B
b. Partial Release			X	X						
9. Reclamation Standards									e	
o Water	X	X	X		X		X			X
o Topsoil	X	X	X		X					X
o Grading	X	X	X	X	X		X			X
o Highwall			X		X					
o Toxic wastes			X	X	X		X			
o Revegetation	X	X	X	X	X		X			X
10. Exclusion of Mining		X								
11. Substitute Land										
12. Exploratory Permits		B c		B						
13. Surface Effects									X	X

<u>PROVISIONS</u>	<u>STATES</u>					MONTANA	NEBRASKA	NEVADA	NEW HAMPSHIRE	NEW JERSEY
	MASSACHUSETTS	MICHIGAN	MINNESOTA	MISSISSIPPI	MISSOURI					
1. Statute	B	A	A	A	A		A		A	
2. Rules		X	X	X			X		X	
3. Coverage		D	C	B	E		E		D	
4. Staff		8	7	5	3		10		1	
5. Permit			X	X	X		X		X	
6. Reclamation Plan		X f	X	X	h		X		X	
7. Hearing			B	A g	h				B	
8. Bond		X	X	X	X		X		X	
a. Amount		A	A	B	C i		B		B	
b. Partial Release				X			X k			
9. Reclamation Standards					h		1			
o Water		X	X	X			X		X	
o Topsoil				X			X		X	
o Grading		X	X	X	X		X		X	
o Highwall				X			X		X	
o Toxic wastes			X	X	X		X		X	
o Revegetation		X	X	X	X		X		X	
10. Exclusion of Mining			X	X						
11. Substitute Land				X	X j					
12. Exploratory Permits			B	A			A m		A	
13. Surface Effects			X	X			X		X	

PROVISIONS	<u>STATES</u>										
	NEW MEXICO	NEW YORK	NORTH CAROLINA	NORTH DAKOTA	OHIO		OKLAHOMA	OREGON	PENNSYLVANIA	RHODE ISLAND	SOUTH CAROLINA
1. Statute	B	A	A	B	A		A	A	A		A
2. Rules		X	X		X			X	X		X
3. Coverage		A	A		B		B	A	A		A
4. Staff		10	6-7		8		5-6	4	18 ⁰		6
5. Permit		X	X		X		X	X	X		X
6. Reclamation Plan		X	X		X		X	X	X		X
7. Hearing											
8. Bond		X	X		X		X	X	X		X
a. Amount		A	C		C		C	B	A		C
b. Partial Release					X		X				
9. Reclamation Standards											
o Water		X	X		X			X	X		X
o Topsoil					X			X	X		
o Grading		X	X		X		X	X	X		X
o Highwall					X						
o Toxic wastes		X			X		X				
o Revegetation		X	X		X		X	X	X		X
10. Exclusion of Mining											
11. Substitute Land											X
12. Exploratory Permits			B								
13. Surface Effects		X	X				X				X

PROVISIONS	STATES					VIRGINIA	WASHINGTON	WEST VIRGINIA	WISCONSIN	WYOMING
	SOUTH DAKOTA	TENNESSEE	TEXAS	UTAH	VERMONT					
1. Statute	A	A	A	A	A	A	A	A	A	A
2. Rules	X	X	X	X		X	X	X	X	X
3. Coverage	A	D	E	A	A	B	A	B	C	A
4. Staff	4-5	6-7	12-13	9-10	0-1	10	10	2-3	5	20
5. Permit	X	X	X	X	X	X	X	X	X	X
6. Reclamation Plan	X	X	X	X	X	X	X	X ^r	X	X
7. Hearing	A		B	B	B				A	B
8. Bond	X	X	X	X		X	X	X ^r	X	X
a. Amount	A	B	A	A		B	B	B	A	B
b. Partial Release		X	X					X		X
9. Reclamation Standards					q			r		
o Water		X	X	X		X	X	X	X	X
o Topsoil	X	X	X	X		X	X	X	X	X
o Grading	X	X	X	X		X	X	X	X	X
o Highway	X	X	X	X				X		
o Toxic wastes	X		X	X		X	X	X	X	X
o Revegetation	X	X	X	X		X	X	X	X	X
10. Exclusion of Mining	X		X					X	X	
11. Substitute Land										
12. Exploratory Permits	p A	A	C	B			B		A	A
13. Surface Effects	X		X	X		X			X	X

FOOTNOTES

a. A permit is required for dredge and placer mining, but not for other surface mining.

b. The bond amount is fixed by statute for placer mining; it is variable but subject to a statutory maximum for other surface mining.

c. Under the surface mining law, exploratory activity too small to require a mining permit requires provision of notice.

d. Bond is required only under certain conditions.

e. All major land developments in Maine, including surface mining, are conditioned on a showing that there will be "no unreasonable adverse environmental effects."

f. The administering agency may require such a plan.

g. The hearing requirement does not apply in the case of construction materials.

h. Missouri law covering coal, barite, and tar sands requires a reclamation plan, provides for a hearing, and specifies more extensive reclamation standards.

i. The amount can be reduced at the administering agency's discretion.

j. For planting purposes only.

k. Applies only to uranium and coal.

l. Not all standards apply to all minerals.

m. No exploration permit is required for minerals other than metallic and uranium, but exploration for construction materials requires a mining permit.

n. Exceptions to the statutory amount are allowed.

o. Their duties include enforcement of health and safety laws pertaining to surface mining operations.

p. Except for exploration for construction materials.

q. All developments, including surface mining, must meet eleven criteria for assuring that environmental concerns are met.

r. Reclamation and bonding requirements apply to all minerals except limestone, sandstone, and sand.

PART IV
STATE PROFILES

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EXPLANATION OF STATE PROFILES

Summary: Fifty state profiles follow in alphabetical order. Each profile is in the format described in the next few pages, including a summary, brief in most cases, but more lengthy in the case of states with rather atypical regulatory programs.

As indicated below, the state profiles do not enumerate all the important dimensions of the differences among state regulatory programs. The discussion provides a context for reading the individual state profiles, and should facilitate detailed analysis of state programs.

Major Minerals: Some of the major minerals mined in the state are listed in this section. The information is derived from U.S. Bureau of Mines statistics and the testimony of state officials regarding major mining activity.

Statute: This is the citation for the statutory authority for regulating surface mining of minerals other than coal, and is the statute or statutes summarized in the state profile. Readers interested in the details of a particular state program should refer to the statute.

Rules: If rules, regulations, or guidelines have been promulgated under the authority of the statute cited, they are noted in this section. Where possible, reference is made to either the date of adoption or the effective date, but in some instances the rules are undated. In each instance every effort was made to obtain a copy of the currently applicable rules.

Coverage: This section indicates the minerals covered by the statute regulating surface mining of minerals other than coal. The reader should be aware, however, that the coverage of the statutes differs along other dimensions not explicitly covered by this report. Statutory definitions of surface mining operations differ among states. Non-commercial operations are usually exempt from regulation, and exploratory activities are often either exempt or subject to different regulations, standards, and requirements. Mining incidental to state highway projects or conducted by local government is often exempt from some or all regulation. There is often a threshold, based on the number of acres disturbed, the volume of minerals realized, or the amount of overburden moved, that must be crossed before state regulations apply.

Administering Agency: This is the state government agency that has been given the authority to administer and enforce the statute regulating surface mining of minerals other than coal. In many states, the rule-making and ultimate decision-making authority rests with an appointed citizens' board or commission with substantial independence from the administrative structure of state government. In other instances, such a board or commission is authorized to hear appeals from administrative decisions made by the head of

the administering agency. Ultimate appeal recourse, however, is to the courts, with states differing as to the weight the courts are obliged to give to the findings of the administrative agency, board or commission.

In some states the statute provides for a purely advisory committee, typically including membership from the mining industry, universities, and the general public. Several statutes either mandate or encourage the provision of assistance to the administering agency by other agencies of state government having expertise applicable to mining and reclamation.

Staff: This is an estimate, provided by state officials, of the number of state employees, on a full-time-equivalent basis, who are engaged in the administration and enforcement of the statute as it pertains to minerals other than coal.

State Contact: This section lists the person or persons who provided information regarding applicable statutes, rules and regulations, staff, major mining activity, and recent and likely future developments in the state regulatory program. They are generally located in the administering agency.

Mining Permit: Virtually all states regulating surface mining of minerals other than coal require the operator to obtain a permit prior to engaging in mining activities. The term of the permit varies among states, ranging from one year to the duration of active mining. This can be a matter of some importance, depending on the applicable provisions for renewal and amendment. For example, if there is no provision for amendment without operator concurrence, then a long-term permit might not oblige the operator to use newly-available technology in his reclamation efforts. Reporting requirements also differ from state to state, with annual reporting often required if long-term permits are granted. This tends to reduce the importance of the permit term, particularly where, as is common, the state can amend the permit, after a hearing and subject to rights of appeal, during its term.

Another important difference among states is the extent and nature of the information the operator must submit in support of his application for a permit. Virtually all states require submission of a reclamation plan, which typically identifies a proposed post-mining land use or uses and the methods the operator intends to employ to minimize the adverse environmental consequences of the operation and to restore the land to a condition suited to the future use. However, there is wide variation among states in terms of the additional information the operator must, or may be required to, submit. For example, one or more states require the operator to provide at least some of the following information pertaining to the lands where mining will occur: maps, soil surveys, test borings, topography, climate, existing drainage, current water quality, forest inventory, current land use inventory, and current plant and animal inventory.

States also differ in terms of criteria specified for approval or denial of a mining permit. A few states provide for advance designation of lands unsuitable for surface mining, and will not issue permits for mining on such lands. Others provide for denial of specific permit applications if the land is unsuited for mining. The decision-making context is obviously very different depending on which approach is employed.

Reclamation Standards: Whether or not a permit is required, states regulating the surface mining of minerals other than coal impose certain "duties", or standards of reclamation, on the operator. States differ in whether the standards are expressed in terms of results to be achieved or avoided, methods to be used, or some combination of the two.

Six separate categories of standards have been identified for detailed discussion: water, topsoil, grading, highwall, toxic wastes, and revegetation. Where possible, relevant statutes and rules have been extensively quoted, which provides a good indication of the major reclamation concerns in a state, given the extent and type of mining activity being regulated. States also differ in terms of the specificity of the standards and the amount of administrative discretion that exists. The more specific the standard, the more likely it is that a procedure exists for the granting of a variance or exception from the standard.

Inspection: Statutes differ considerably in terms of their approach to agency investigation and inspection to determine compliance with the statute, permit, and rules and regulations. A few simply allow agency inspection, but most require inspection at certain times; e.g. upon receipt of a permit application, citizen complaint, annual report, or report of reclamation completion. In some states, advance notice must be given to the operator, while in others such notice is prohibited. Two state laws encourage rotation of mine inspectors, and several entitle the operator to receive a copy of all inspection reports.

Local Role: The states differ widely in terms of the role assigned to local government and private citizens in the regulatory scheme. In some states regulation is, in effect, a matter involving only the operator, surface owners, and the state agency. At the other extreme, one state regulatory framework provides that permits be obtained from local government. In states without a statewide program for regulation of surface mining of minerals other than coal, local government may play an important regulatory role.

One of the more important differences among state regulatory programs is the existence and nature of provisions for public hearings concerning the granting of a permit, approval of reclamation, and release of the bond. This is measured by the matrix presented earlier in this report.

Bonding: Most states are concerned with assuring completion of required reclamation when a financially irresponsible operator fails to comply. A system of fines or a civil suit for damages would be of little avail with a bankrupt operator. Thus, a bond or other security must typically be posted prior to initiating mining operations. The details differ, but an operator is usually obliged to pay a premium to a third party in return for the third party's guarantee to the state that they will either perform the operator's statutory duties, should the operator fail to do so, or be liable for the amount of the surety or bond involved. Alternatively, the operator may be allowed to place cash or negotiable securities on deposit with the state; this serves in effect as collateral the state can claim in case of operator default.

Procedures for bond forfeiture differ in detail, but more significant differences involve the amount of the bond required and whether forfeiture of the bond relieves the operator, as well as the surety, from further obligations under the statute.

States also differ in terms of the time limits imposed on operators. Most require that reclamation activities be conducted, insofar as possible, concurrently with mining. Unless reclamation is completed within a specified time period, the state may be authorized to seek bond forfeiture. States also differ in terms of how long the state is entitled to insist on maintenance of a bond to assure the ultimate success of reclamation.

Penalties: Operators who violate the statute, rules and regulations, or terms of their permit, are usually subject to bond forfeiture, but may be subject to other penalties as well. In most states, if an operator forfeits a bond, he will be unable to obtain a permit to mine other lands. The statutes of the various states almost always provide that permits can be suspended or revoked for violation of the statutes. Similarly, almost all states provide either civil or criminal penalties (typically fines) for operation without a permit. Many provide civil penalties for other violations of the act as well. In some instances, each day the violation continues constitutes a separate offense. Criminal penalties, sometimes including the possibility of imprisonment, are often applicable if violations are "knowing and wilfull."

Other Provisions: Interesting or unusual features of a state statute not elsewhere noted are discussed in this section.

ALABAMA

Summary: The Alabama regulatory program does not apply to stone quarries, and is an early example of a state permit program. Standards are not particularly stringent, the bond required is minimal, no reclamation plan need be submitted, and revegetation is not required where the soil is infertile. Small sand and gravel operators are not required to post a bond or pay an application fee. No changes in the program are envisioned in the near future.

Major Minerals: Coal, sand and gravel, clay, stone.

Statute: "Surface Mining Act of 1969" (Code of Alabama, sec. 9-16).

Rules: Adopted 11/1/72.

Coverage: Excludes limestone, marble, and dolomite.

Administering Agency: Safety and Inspection Division of the Department of Industrial Relations.

Staff: Three to four.

State Contact: Jerry Scharf.

Mining Permit: A mining permit is required, with a term of one year. The permit application must be accompanied by a fee and security.

Reclamation Standards:

Water: Water is to be diverted "in a manner designed to reduce siltation, erosion, or other damage to streams and natural water courses."

Grading: Peaks and ridges must be reduced to a "rolling topography."

Toxic Wastes: Such materials must be covered with overburden or a permanent water impoundment.

Revegetation: The reforestation standard is the establishment of 400-450 seedlings per acre, but the operator need not revegetate where "characteristics of the soil...seriously inhibit plant growth." Reclaiming lands for non-forest use is subject to rules and regulations, but the only rule promulgated requires that if pasture grasses are used, "coverage must be effectuated to not less than 75% of the affected land."

Inspection: The statute permits entry for inspection and requires inspection after reclamation; regulations provide that foresters shall inspect "to determine reclamation progress."

Bonding:

Amount: \$150/acre.

Release: The bond will be released within thirty days of meeting all the requirements of the Act and notifying the Department to that effect.

Penalties: Bond forfeiture can be sought for violations of the statute. Operation without a permit is punishable by fine, and the operator must post bond and reclaim affected lands.

ALASKA

Summary: Alaska's general mining law is oriented toward mine safety, and there is no statewide reclamation law applicable to privately owned lands. However, Alaska is unique insofar as the vast majority of land is publicly-owned. The current statute governing public lands is oriented toward resource development, and contains no explicit reclamation requirements. However, rules and regulations promulgated under the general powers of the Commissioner of Natural Resources require permits for miscellaneous uses of state lands, including certain minerals exploration activities. The purpose of these rules is "to provide controls over activities on State of Alaska lands in order to minimize adverse effects on the land and its resources." In addition, reclamation activities may be required as a condition of a mineral lease on public lands. Future changes in minerals law and policy appear likely.

Major Minerals: Stone, sand and gravel, precious metals.

Statute: None.

State Contact: Laurel Murphy

ARIZONA

Summary: Arizona has no statewide reclamation law applicable to privately-owned lands. On the more than one million acres of state trust lands, however, a minerals policy has been developed consistent with state law. Arizona statutes require that the recipient of a minerals exploration permit on state lands must "...so far as reasonably possible, restore the surface to its former condition" (A.R.S., sec. 27-252). The recipient of a mineral lease on state lands must "furnish bond, in a reasonable amount...conditioned that the lessee will guarantee restoration...to a reasonable condition in accordance with good mining practices." (A.R.S., sec. 27-273)

The Mineral Resources Sub-Committee of the Governor's Citizens' Commission on Arizona Environment has agreed that development of a state minerals policy is desirable. The policy developed for application to state lands may serve as a model.

Major Minerals: Copper, molybdenum, clay, sand and gravel, stone.

Statute: None.

State Contacts: Bob Larkin , Larry Fellows.

ARKANSAS

Summary: Requirements of the Arkansas statute are moderately stringent, but no detailed rules have been promulgated. Small sand and gravel operators need not pay an application fee or post security, but are subject to reclamation standards. With a non-coal enforcement staff of only one person, the Pollution Control Commission must clearly solicit and rely on the advice of other personnel. Amendments may be sought to allow substitution of lands for reclamation purposes and to allow an irrevocable letter of credit as an alternative to the bond or security requirement.

Major Minerals: Stone, sand and gravel, clay, bauxite, barite, vanadium.

Statute: "Open Cut Land Reclamation Act of 1977" (52 Arkansas Statutes Annotated, sec. 917-934).

Rules: Rule to exempt non-commercial operations adopted 1/27/78.

Coverage: All minerals (but the Commission does not consider stone to be a mineral).

Administering Agency: Pollution Control Commission, Department of Pollution Control and Ecology.

Staff: One.

State Contact: Gene Newsome.

Mining Permit: A permit is required. The permit application must be accompanied by a fee, bond or security, and a detailed reclamation plan. Approval of the plan is to be based on the advice of agencies possessing reclamation expertise. If the Commission does not act to approve or disapprove the application within 90 days, the permit must be granted.

Reclamation Standards:

Water: Refuse disposal is to be designed to "control siltation, erosion, or other damage to streams and natural water courses." If a lake is to be left as part of the reclamation plan, provision must be made to assure that the pH factor is between 6 and 8.

Grading: A "rolling or terraced topography with adequate drainage" is required. There is a maximum allowable final slope.

Toxic Wastes: Acid forming materials must be covered by water or dealt with in a manner approved by the Commission to "prevent formation of acid mine water discharge."

Revegetation: The operator must conduct soil tests and make recommendations conforming to those of state and federal agricultural or forestry agencies.

Inspection: The Commission or its representatives may enter lands at all reasonable times for the purpose of determining compliance.

Bond Requirements:

Amount: Estimated cost of reclamation.

Release: The bond must be released when the Commission finds that reclamation has been completed and results "appropriate to the use for which the area was reclaimed" have been achieved.

Penalties: The mining permit can be suspended until reclamation is in compliance, or forfeiture can be sought. A fine is provided for operation without a permit.

CALIFORNIA

Summary: California's program for regulating surface mining is unique in terms of its extensive reliance on local government for administration and enforcement. The state role was expanded somewhat by recent amendments to the 1975 statute, and is likely to expand further in the future should local governments fail to meet their obligations under the law.

The essence of the state role in the regulatory scheme is the development of an overall policy for reclamation of mined lands, designation of areas of regional or statewide significance where there are important mineral deposits that could be jeopardized by development and incompatible land uses, and provision of technical assistance when requested by local government. State policy must be "based upon a study of the factors that significantly affect the present and future condition of mined lands..." The Office of Planning and Research is required to identify "areas...which are urbanized or are subject to urban expansion or other irreversible land uses which would preclude minerals extraction." The State Geologist is obliged to classify these and other areas according to the significance of existing mineral deposits.

Local units of government are required to adopt ordinances enabling them to review and approve reclamation plans, and to issue permits for surface mining. The 1980 amendments provide for state review of the ordinances; if inconsistent with state policy, the operator must obtain state approval of his reclamation plan. Local government agencies making land use decisions involving areas of regional or statewide significance are expected to consider the broad geographic impact of their decisions, and not simply to evaluate the impact on their own local jurisdiction.

Major Minerals: Clay, sand and gravel, stone, iron ore, phosphate rock, gypsum, asbestos, diatomite, feldspar, gold.

Statute: "Surface Mining and Reclamation Act of 1975" (Ch. 9, Annotated California Public Resources Code, sec. 2710-2795).

Rules: "Policies and Procedures" (first revision, June, 1979).

Coverage: All minerals.

Administering Agency: State Mining and Geology Board.

Staff: Eight.

State Contact: Douglas Sprague

Mining Permit: A permit must be obtained from a local unit of government (called a "lead agency"), and is not issued until a reclamation plan has been submitted and approved.

Reclamation Standards: The Board was required by statute to develop and adopt a state reclamation policy which "shall include, but not be limited to, measures to be employed by lead agencies in specifying grading, backfilling, resoiling, revegetation, soil compaction, and other reclamation requirements, and for soil erosion control, water quality and watershed control, waste disposal, and flood control." The standards described below are specified in the policies adopted by the Board.

Water: Settling ponds or basins are required "where they will provide a significant benefit to water quality." Where groundwater recharge is a significant consideration, operations must "substantially prevent siltation of recharge areas." Other agency regulations must also be complied with.

Topsoil: Salvage of topsoil "is a crucial part of the reclamation process" and may necessitate a soil survey. It is acknowledged, however, that in some instances "it may be impractical or impossible to salvage soil."

Grading: Slope stability is the critical factor, and engineering analysis may be required. Grading must be done in a manner that avoids excessive erosion.

Toxic Wastes: Waste materials must be "removed or protected to reduce leaching to allowable levels."

Revegetation: The operator must utilize available research results and may be required to enrich soil materials.

Inspection: Local ordinances must provide for "periodic inspections" of surface mining operations.

Local Role: State policy shall not govern "aspects of regulating surface mining operations which are solely of local concern...such as...hours of operation, noise, dust, fencing, and purely aesthetic considerations." A public hearing is required prior to local approval of a permit application.

Bonding: The local ordinance "may include provisions for liens, surety bonds, or other security to guarantee reclamation in accordance with the reclamation plan."

COLORADO

Summary: The Colorado statute is one of the more comprehensive, and is supplemented by fairly extensive rules and regulations. The role of local government and private citizens in the permitting process is greater than in most states, and the statute imposes an explicit duty on other state agencies to cooperate with the Board of Mined Land Reclamation in the enforcement of the Act. Another unusual feature is the provision for three types of permits: regular, limited impact, and special. The Board is given specific deadlines for acting on applications for each type of permit, and the permit is deemed approved if the Board fails to act within the relevant time period. Both environmental groups and industry representatives are expected to seek future modifications in the law.

Major Minerals: Molybdenum, coal, sand and gravel, stone, uranium, shale, clay.

Statute: "Colorado Mined Land Reclamation Act," 1976 (Colorado Revised Statutes, sec. 34-23).

Rules: Effective 7/78.

Coverage: All minerals.

Administering Agency: Mined Land Reclamation Board, Department of Natural Resources.

Staff: Seven to eight.

State Contact: Robert Campbell.

Mining Permit: A mining permit is required, and is valid for the life of the mine. Permit applications must be accompanied by a fee, map, and reclamation plan. No permit will be granted until surety is provided. At its discretion, and for good cause shown, the Board may hold a public hearing to determine whether or not a permit should be granted.

Reclamation Standards: The standards below are specified in the statute, and are further elaborated by fairly extensive rules.

Water: Disturbances to the hydrologic balance must be minimized.

Topsoil: It is to be segregated from other spoils, and preserved "in a useable condition for sustaining vegetation..."

Grading: It must be carried on "so as to create a final topography appropriate to the final land use" selected in the reclamation plan.

Toxic wastes: They shall be handled "in a manner that will protect the drainage system from pollution."

Revegetation: It is to be conducted so as to "establish a diverse, effective and long-lasting vegetative cover that is capable of self-regeneration and at least equal in extent of cover to the natural vegetation of the surrounding area." Good planting practices must always be used, but no planting is required if soil conditions "seriously inhibit plant growth..." and "cannot feasibly be remedied by chemical treatment, fertilization, replacement of overburden, or like measures."

Inspection: The Board may enter at all reasonable times and must inspect following notice of completion of reclamation activities.

Local Role: Local government must be notified by the Board about permit applications, and no permit may be granted if it is contrary to an adopted plan of local government. Prior to approving a reclamation plan, the Board must confer with the relevant board of county commissioners and board of supervisors of the local soil conservation district. In addition, the operator is required to publish a notice of his application for a permit, and any person is entitled to file objections or statements in support of the application.

Bonding:

Amount: The surety required to be filed for a regular permit must be based on the costs of reclamation.

Release: Bond is released when it is found that reclamation is satisfactory. If the Board fails to respond within sixty days to a notice of completion filed by an operator, the reclamation is deemed satisfactory.

Penalties: If, following a hearing, the Board determines that there has been a violation of the statute or any rule or permit issued thereunder, it may modify, suspend, or revoke the permit or seek forfeiture of the surety. Civil penalties are also provided for operating without a permit and for violations of the permit.

Other Provisions:

Exclusion of Mining: Although there is no provision for advance designation of lands unsuitable for mining, there are several circumstances in which a permit can be denied because of the location of the lands in question.

Exploration Permits: Although no permit is required in order to conduct mineral exploration, a prospecting notice must be filed. The prospector must post surety and comply with the same reclamation standards imposed on mine operators.

CONNECTICUT

Summary: Mining activity in Connecticut is largely limited to construction materials, and there is no statewide regulatory program. Local government land use control and permit activities may be applied to mining and reclamation.

Major Minerals: Sand and gravel, stone.

Statute: None.

State Contact: Art Brock.

DELAWARE

Summary: There is no statewide regulation of the limited amount of mining activity occurring in the state of Delaware, which relies instead on local zoning ordinances. Legislation is currently being drafted within the executive branch that would provide state guidance to local governmental units as they attempt to assure adequate reclamation.

Major Minerals: Sand and gravel, clay.

Statute: None.

State Contacts: Robert Jordan, Rod Bartchy.

FLORIDA

Summary: The Florida program is unique in that it allows operators to obtain a refund of severance taxes paid equal to the costs of reclamation and restoration incurred. The statutory basis for the program is very brief, but has been supplemented by somewhat more extensive rules.

In 1980 the Governor attempted to get a more extensive and conventional mining bill considered, and is likely to have a similar bill introduced in 1981.

Major Minerals: Phosphate rock, stone, clay, sand and gravel.

Statute: Florida Statutes Annotated, sec. 211.32.

Rules: Effective 10/7/80.

Coverage: All "solid minerals" subject to severance tax.

Administering Agency: Department of Natural Resources.

Staff: Six.

State Contacts: Bruce Greenwood, Vance Kidder.

Mining Permit: Not required.

Reclamation Standards: The statute provides only that the taxpayer "institute and complete a reclamation and restoration program" on each site subject to severance tax, and meet criteria adopted by the Department which include five general standards: "(1) Control of the physical and chemical quality of the water draining from the area of operation; (2) Soil stabilization, including contouring and vegetation; (3) Elimination of health and safety hazards; (4) Conservation and preservation of remaining natural resources; and (5) Time schedule for the completion of the program and the various phases thereof."

The more detailed standards below are drawn from the latest rules issued by the Department.

Water: To the greatest extent possible, the operator is to restore the original drainage pattern, and all waters "on leaving the property under control of the taxpayer" shall meet state water quality standards.

Topsoil: Its use is "encouraged," and "where topsoil is not used, the operator shall use a suitable growing medium for the type of vegetative communities planned."

Grading: Slopes are limited to one vertical to four horizontal except "where justified" and "where adequate stabilization can be assured."

Toxic Wastes: Wastes must be "replaced in the mine cut beneath all other backfill material" or be dealt with in another manner expressly approved by the Department.

Revegetation: Fairly detailed standards are listed for achieving "permanent revegetation which will minimize soil erosion, conceal the effects of surface mining (and) recognize the requirements for appropriate habitat for fish and wildlife."

Inspection: The rules provide for right of entry, and mandate inspection "on an irregular basis at a frequency necessary to insure compliance." Inspections of reclamation shall occur at least quarterly, and the operator will receive prior notice and a copy of the inspection report if requested.

Local Role: The Department may adopt as criteria local ordinances meeting the minimum standards established in the statute. By rule, the Department has provided for simultaneous local review of applications for approval of a reclamation plan.

GEORGIA

Summary: The Georgia program relies heavily on the requirement that the operator prepare and obtain approval of a "Mined Land Use Plan" before a permit is issued. This approved plan provides the reclamation standards the operator must meet. State officials are convinced that the approach works, and would work for coal as well. There may be an attempt to remove the statutory bounds on the amount of the surety required of mine operators.

Major Minerals: Clay, stone, sand and gravel, bauxite, feldspar, iron ore.

Statute: "Surface Mining Act of 1969" (Code of Georgia Annotated, Ch. 43-14).

Rules: Revised rules dated 8/8/76.

Coverage: Excludes stone.

Administering Agency: Environmental Protection Division, Department of Natural Resources.

Staff: Eight.

State Contact: Sanford Darby.

Mining Permit: A permit is required. The permit application must be accompanied by a "Mined Land Use Plan" consistent with land use in the area and providing for reclamation. No permit is issued until the plan is approved and a performance bond is filed.

Reclamation Standards: These are established by regulation, rather than by statute.

Water: The plan must be designed to protect "adjacent watersheds from effects of erosion and siltation."

Topsoil: Its use must be described in the plan.

Grading: It must be described in the plan.

High Wall: Its reduction must be described in the plan.

Revegetation: It must be described in the plan. All lands not specifically exempted by the approved plan will "contain a high quality, permanent vegetative cover."

Inspection: The Department is empowered to make investigations and inspections.

bonding:

Amount: The statute provides a range from \$100-\$1000 per acre as determined by the Department based on "the character and nature of the land reclamation requirements specified in the approved Mined Land Use Plan." The bonding requirement can be waived for financially responsible operators.

Release: Release follows satisfactory reclamation of the affected lands.

Penalties: In addition to bond forfeiture, permits can be revoked if the operator fails to comply with his approved plan. Civil fines are provided for violations of the statute and the rules and regulations.

HAWAII

Summary: A statute was passed in 1957 to regulate surface mining in Hawaii. The law was in anticipation of bauxite mining which never materialized and the statute excludes from coverage the only materials actually mined in the state. As a consequence, the statute is inactive, but would provide a basic regulatory framework should surface mining of non-construction minerals become a future reality.

Major Minerals: Stone, cement, sand and gravel.

Statute: Chapter 181, Hawaii Revised Statutes.

Rules: None.

Coverage: Excludes construction materials.

Administering Agency: Board of Land and Natural Resources.

Staff: None.

State Contact: Ed Sakota.

Mining Permit: A permit is required, with a one year term. The application must be accompanied by a fee and bond. A mining plan must be submitted and approved by the Board prior to commencement of mining; when mining is complete with respect to any lands, a reclamation plan must be submitted and approved by the Board.

Reclamation Standards:

Water: Actions must be taken to prevent accumulation of water in the affected area.

Topsoil: Topsoil must be replaced if this action is required to accomplish revegetation.

Grading: The affected area must be graded "to contour which will minimize erosion and be suitable for planting."

Revegetation: Several actions are required in order to achieve, where possible, at least "comparable fertility and use of land to that existing prior to strip mining."

Inspection: The Board must inspect the site when notification of reclamation completion is received, and must investigate sworn written complaints made by any individual, provided that the alleged facts, if true, "would constitute grounds for refusal, suspension, revocation, or cancellation of a permit..."

Bonding:

Amount: It is based on the reasonable costs of "restoring and rehabilitating the land," but cannot exceed \$300/acre.

Release: The bond is released upon the operator's showing that he has complied with the requirements of the chapter.

Penalties: A civil penalty can be assessed for operating without a valid permit, which can be suspended or revoked for violations of the statute.

IDAHO

Summary: Idaho has an enormous variety of mining and exploration activity. The regulatory program is based on two statutes, one governing dredge or placer mining and the second covering other surface mining. The former is the product of a statewide initiative proposal in 1954; the latter statute was passed by the legislature in 1971. The legislature voted to repeal the surface mining law in 1977, but the governor's veto of the repeal was narrowly upheld. No regulations have yet been promulgated for the surface mining act, but they exist in draft form.

Under both statutes large-scale exploration activities require a mining permit. Other exploration activities involving motorized earth-moving equipment require no permit or approval, but do require that notice be given to the Board of Land Commissioners. The applicable reclamation standards are dependent on the extent of the affected lands.

Major Minerals: Phosphate rock, silver, zinc, lead, sand and gravel, stone.

Statutes: "Dredge and Placer Mining Protection Act" and the "Surface Mining Act" (Title 47, Chapters 13 and 15, Idaho Code.)

Rules: "Rules and Regulations Governing Dredge and Placer Mining Operations in Idaho," dated 11/12/80.

Coverage: All minerals.

Administering Agency: Board of Land Commissioners, Department of Lands.

Staff: Two to three.

State Contact: Larry Jones.

Mining Permit: A permit is required for dredge and placer mining; no permit is required for surface mining, but a reclamation plan must be approved by the Board prior to commencement of mining operations. (If the Board fails to respond within a specified period, the plan is deemed approved.) No mining is permitted without posting security. By regulation, the Board requires approval of a reclamation plan as part of the dredge and placer mining permitting process. Hearings may be held at the Board's discretion prior to approving a plan or issuing a permit.

Reclamation Standards: The surface mining act specifies certain "procedures in reclamation" that must be followed. Once approved, the reclamation plan governs the operator's reclamation obligations. The placer mining law also imposes certain duties on operators.

Water: The placer mining statute requires water clarification, and the regulations specify sediment control procedures that can be employed to "prevent stream or lake siltation in excess of that which results normally from the undisturbed site..." unless lesser standards apply under the state's environmental laws. The statutory standard for surface mining is the same.

Topsoil: The surface mining law requires that affected lands be covered, to the extent it is reasonably available from the pit, with "that type of overburden which is conducive to the control of erosion or the growth of...vegetation." The placer mining law requires that, insofar as reasonably possible, the "operator shall be required to restore the land to its original condition;" this requirement has been amplified by regulation to require removal, storage and replacement of topsoil except where other soil strata can be shown to be "more conducive to plant growth."

Grading: The surface mining act requires that peaks and ridges of overburden be graded to specified widths, and that overburden "be reasonably prepared to control erosion." The placer mining statute requires grading such that the ground is "reasonably comparable with the natural contour...prior to disturbance."

Revegetation: The surface mining law requires planting "which can be expected to result in vegetation comparable to the vegetation which was growing in the area...prior to the...operations." Similar standards have been adopted by regulation to apply to placer mining.

Inspection: The surface mining statute authorizes inspection "at all reasonable times;" the operator is entitled to accompany the inspector. The placer mining law calls for periodic inspections, at the permittee's expense, and these costs become a lien against the land.

Bond Requirements:

Amount: For placer mining, \$15,000 plus \$1,000 for each acre in excess of ten. For surface mining, the amount is to be sufficient to insure the operator's performance, but cannot exceed \$750/acre.

Release: When the Board determines that the requirements of the reclamation plan have been met, the bond is released.

Penalties: After a hearing, the Board can terminate the placer mining permit and forfeit the bond for violations of the statute. The Board can seek

forfeiture of the bond for violation of the surface mining law as well. Civil and criminal penalties are provided for violation of the surface mining act; violation of the placer mining statute is a misdemeanor.

Other Provisions:

Exclusion of Mining: Dredge mining is prohibited by statute in water bodies making up the national wild and scenic rivers system.

ILLINOIS

Summary: The Illinois program is based on a statute covering all minerals, including coal, and administration and enforcement efforts are directed primarily toward coal. The statute provides for creation of an "Aggregate Mining Problems Study Commission," which is to report in 1981. The Commission's primary charge is to determine whether or not separate legislation should be developed to deal with aggregate mining.

The rules and regulations adopted are quite detailed, and a significant role is provided for the governing body of the local unit of government whose jurisdiction will be affected by the mining operation. A relatively unusual feature is the creation of a Citizens Advisory Council whose role is to advise on development of rules and regulations, and to give non-binding recommendations on plan approval. A unique provision allows the Department of Mines and Minerals, at its discretion, to accept evidence of successful reclamation of previously mined lands in lieu of bond; the duty to reclaim the newly affected lands is not affected.

Major Minerals: Coal, stone, sand and gravel.

Statute: "Strip Mined Land Conservation and Reclamation Act," 1971 (96 1/2 Illinois Annotated Statutes, sec. 4501-4520).

Rules: Effective 3/18/76.

Coverage: All minerals.

Administering Agency: Department of Mines and Minerals.

Staff: Three to four.

State Contact: Douglas Downing.

Mining Permit: A permit is required, and has a three year term. The application must be accompanied by a fee, bond, and reclamation plan. Approval of the plan must be based on technical advice.

Reclamation Standards: The statute imposes a variety of "duties" on the operator, and the rules and regulations include detailed criteria for determining whether or not the statutory duties have been met. The standards cited below are drawn from the statute, except where otherwise noted.

Water: Runoff must be dealt with to reduce erosion and pollution.

Topsoil: If the proposed land use is row crops, the topsoil must be segregated and replaced unless other material is suitable; this provision does not apply to aggregate mining.

Grading: The statute includes detailed slope requirements that supplement the general duty to create "a rolling topography traversible by machines necessary for maintenance in accordance with planned use."

Highwall: Except for the aggregate industry, or where exceptions are granted, highwalls must be reshaped to a slope of two to one.

Toxic wastes: These materials must be covered to a depth of four feet with either water or other materials capable of sustaining plant and animal life.

Revegetation: The rules and regulations specify differential criteria for successful revegetation depending on the proposed final land use.

Inspection: The Department is entitled to inspect at all reasonable times.

Local Role: The operator must provide a copy of the permit application to the county government containing land to be affected; the application will be made available for public inspection. The local county board can propose the final land use, and if the board so requests, the Department will hold a public hearing in the affected county. Once approved, the reclamation plan must be filed with the county clerk for public inspection.

Bonding:

Amount: \$600-\$5,000 per acre as determined by the Department.

Release: All but \$100 per acre is released once grading has been completed and the land has been covered "with materials capable of supporting vegetation." The bond is completely released when the operator has completed reclamation and "achieved results appropriate to the use for which the area was reclaimed."

Penalties: The bond can be forfeited in the event of the operator's failure to fully satisfy his obligations under the statute. Fines are provided for operating without a permit.

INDIANA

Summary: The Indiana program is based on a statute originally passed in 1967. It covers only coal, clay, and shale. A more stringent law was recently passed that applies only to coal. The state's enforcement emphasis is currently on coal, although a separate section specializing on clay and shale may evolve in the future with an enforcement staff of as many as four. The statute contains no unusual features, and the reclamation standards are fairly typical.

Major Minerals: Coal, clay, stone, sand and gravel.

Statute: Indiana Statutes Annotated, Title 13, Article 4, Chapter 6, sec. 7-13.

Rules: A fifth edition of the "guidelines" was approved 8/31/77.

Coverage: Coal, clay, and shale.

Administering Agency: Natural Resources Commission, Department of Natural Resources.

Staff: One.

State Contact: Stephen B. Stafford.

Mining Permit: An annual permit is required. The application must be accompanied by a fee, map, and plan of operations and reclamation. No permit can be issued until a bond is posted.

Reclamation Standards: Except where noted, the standards below are derived directly from the statute.

Grading: The land must be restored "to a rolling, or sloping or terraced topography consistent with the land use objectives" specified in the reclamation plan. Grading should minimize erosion and "permit the operation of suitable machinery." The guidelines establish more detailed grading standards for each of three major land uses.

Toxic Wastes: They must be covered with non-toxic overburden to a minimum depth of two feet or by a permanent water impoundment.

Revegetation: A detailed revegetation plan consistent with the reclamation plan must be approved prior to planting.

Inspection: The Commission is accorded "access" by statute to all lands under a permit or permit application.

Bonding:

Amount: The Commission establishes the amount based on an evaluation of nine specified factors, but it must be at least \$1,000/acre or \$5,000, whichever is greater.

Release: Upon completion of the grading requirements, the operator may obtain a partial release. The amount retained, however, must be adequate to cover satisfactory reclamation and may be retained for up to fifteen years.

Penalties: Following a hearing, the permit can be suspended or revoked for non-compliance. Revocation is accompanied by bond forfeiture. Violations of the statute are classed as "class A infractions" under Indiana law.

IOWA

Summary: No rules have been promulgated dealing with minerals other than coal. The Iowa statute is fairly typical but not particularly stringent; the Soil Conservation Commission has a minimal staff to enforce it. Some minor amendments to the law are envisioned, including a provision for allowing a variance from the grading slope requirements. Operators in Iowa must be licensed, and lands must be "registered" before they can be surface mined.

Major Minerals: Stone, sand and gravel, coal, clay, gypsum.

Statute: Code of Iowa, sec. 83A.

Rules: None.

Coverage: All minerals, except coal.

Administering Agency: Soil Conservation Committee, Department of Soil Conservation.

Staff: One.

State Contact: Marvin Ross.

Mining Permit: An operator's license is required, and can be revoked or suspended for violation of the statute or related federal acts. Each site must be registered, and the registration application must be accompanied by a fee, a mine and reclamation plan, and a bond or security. An annual report is required for each site remaining under active registration.

Reclamation Standards:

Water: After mining is complete, the operator must construct earth dams "to properly control the drainage of acid waste from the site."

Grading: Grading should reduce the slope to a maximum of one foot vertical to four feet horizontal, unless the original topography was steeper, in which case the spoil bank must be graded "to blend with the surrounding terrain."

Toxic Wastes: Unless covered by impounded water, acid-forming materials must be covered with at least two feet of earth or spoil material.

Revegetation: Must be completed before bond is released.

Inspection: Authorized at all times upon any lands where mining is authorized. Inspection is required following notification of completion of required reclamation.

Bond Requirements:

Amount: Set "equal to the estimated cost of rehabilitating the site."

Release: After notification by the operator of completion of required rehabilitation, the Department must inspect the site within a reasonable time and release the bond if all required rehabilitation work has been completed.

Penalties: If a hearing by the Committee establishes a violation of the law, the Committee may request the Attorney General to file for forfeiture of the bond. Surface mining on an unregistered site is a simple misdemeanor.

KANSAS

Summary: The current Kansas reclamation program applies only to coal. Operators engaged in surface mining of other minerals have initiated discussions that may lead to future legislation covering other minerals. Any such statute would presumably be less stringent than the statute applicable to coal mining.

Major Minerals: Clay, sand and gravel, stone.

Statute: Covers only coal.

State Contact: Delno Bass.

KENTUCKY

Summary: Kentucky is a state which has experienced a great deal of strip mining for coal. The state program for regulating surface mining is based on a statute that mainly applies to coal. However, rules have been promulgated under the statute and the general authority of the Department of Natural Resources to deal with several other minerals. The program for minerals other than coal is fairly typical, and has no significant unusual features. The 1980 session of the legislature passed a statute requiring the Department to promulgate regulations by June 30, 1982, to cover mining of oil shale. In the interim, oil shale exploratory activities can occur if no more than five acres is affected, but oil shale mining is prohibited.

Major Minerals: Coal, stone, sand and gravel, oil shale.

Statute: Chapter 350, Kentucky Revised Statutes.

Rules: Regulations have been promulgated.

Coverage: Coal, clay, fluorspar, sand and gravel, stone and rock asphalt.

Administering Agency: Bureau of Surface Mining Reclamation and Enforcement, Department for Natural Resources and Environmental Protection.

Staff: Ten.

State Contact: Larry Grash, Laurie Keller.

Mining Permit: Operators must be licensed, and must receive a permit applicable to the lands to be affected. The application must be accompanied by a reclamation plan and, except for clay mining, a fee.

Reclamation Standards: The standards applicable to minerals other than coal have been established by regulation. Clay mining is subject to the same detailed regulations as coal if "done on the contour." However, where it is a "quarry type" operation, there are only four standards specified, including minimization of soil erosion and surface disturbance, burying toxic materials under at least four feet of clean fill, and taking "necessary measures to prevent stream and soil pollution." For the other minerals covered (fluorspar, sand and gravel, stone, and rock asphalt) the following standards are derived from the regulations.

Water: Natural drainways must be kept free of overburden.

Grading: "Spill or overburden removed shall be placed, graded and stabilized so that soil erosion, surface disturbance and stream sedimentation will be minimized."

Revegetation: Stabilization of the affected land is the objective of the revegetation program, for which detailed requirements are specified. Subject to certain exceptions, "all lands disturbed...shall be fertilized, seeded, and planted to legumes, perennial grasses, and trees..."

Inspection: The Department is authorized to make "investigations or inspections which may be deemed necessary to insure compliance..."

Bonding: No bond is required except where the Department finds that an operation involving fluorspar, sand and gravel, stone, or rock asphalt is "only semi-permanent, temporary, or of a hazardous and critical nature."

Amount: \$100-\$500 per acre, with a minimum bond of \$2,000.

Release: The full amount is released "when the necessary reclamation work has been completed and approved..."

Penalties: Civil fines are provided for all violations of the statute and regulations, with large fines prescribed for operation without a permit. Willful violations are subject to criminal penalties.

LOUISIANA

Summary: The current surface-mining regulatory program applies only to coal. However, the last legislature passed a bill requesting the House Natural Resources Committee to study the need for regulation of sand and gravel operations. The committee has not yet begun its work, but is expected to finish prior to the start of the next legislative session in April, 1981.

Major Minerals: Sulfur, sand and gravel, stone, clay.

Statute: None.

State Contacts: Jim Welsn, Elizabeth Megginson.

MAINE

Summary: Since 1979, Maine has regulated surface mining under the provisions of its "site location of development" law, which gives the Board of Environmental Protection substantial discretionary powers. The statute imposes only very general requirements, and the result is a flexible regulatory program consisting mainly of a dialogue between the operator and the state with respect to avoidance of unreasonable adverse environmental effects. A broad-based citizens' committee on minerals policy was established in late 1980; its report is unlikely to suggest significant changes in the regulatory framework.

Major Minerals: Clay, sand and gravel, zinc, stone, copper.

Statute: 38 Maine Revised Statutes Annotated, sec 481-490.

Rules: Effective November, 1979.

Coverage: All minerals.

Administering Agency: Board of Environmental Protection.

Staff: Zero to one.

State Contact: Teco Brown.

Mining Permit: Prior to commencing a mining operation, the operator must notify the Board. Approval of the development, based on submission of such information as the Board requires by regulation, is needed before mining can be conducted.

Reclamation Standards: The statute provides simply that "all mining activities shall include provisions for...reclamation of the land area affected..." Approval of any development, including mining, is conditioned on a showing that the "developer has made adequate provision for fitting the development harmoniously into the existing natural environment and that the development will not adversely affect existing uses, scenic character, or natural resources..." This requirement has become a "no unreasonable adverse environmental effects" standard, which is applied to all development, including mining. Regulations have been promulgated to deal with fifteen different types of potential adverse environmental impacts.

Bonding: The Board may require that a bond be posted.

Amount: If required, the amount must be established with reference to "the character and nature of the overburden, the future suitable use of the land involved and the cost of grading and reclamation to be required."

Penalties: Civil and criminal penalties are provided for violations.

MARYLAND

Summary: The Maryland program relies heavily on the requirement that the operator prepare and obtain approval of a mining and reclamation plan. The law specifies certain standards, and requires that the plan specify additional standards, e.g. compliance with air and water pollution requirements, methods of minimizing hazards to fish and wildlife, rehabilitation of settling ponds, and control of wastes, erosion and siltation. An unusual provision requires that all other regulatory permits be obtained prior to issuance of a mining permit. Permits can be denied if mining will have an "unduly adverse effect on wildlife or...fisheries" or a significant adverse effect on uses of existing public park, forest, or recreation areas. Only minor revisions of the law are likely, although the Department of Natural Resources may seek a coupling of the bond. Rules and regulations are currently being drafted.

Major Minerals: Coal, stone, clays, sand and gravel.

Statute: "Surface Mining Law of 1975" (Annotated Code of Maryland, Natural Resources, Title 7, subtitle 6A).

Rules: None.

Coverage: All minerals, except coal.

Administering Agency: Department of Natural Resources.

Staff: Five.

Mining Permit: An operator's license and a mining permit are required. The permit application must be accompanied by a fee and a mining and reclamation plan. The permit is not granted until the plan is approved, and until all other state and local regulatory permits have been granted. The permit is not effective until a bond or security is provided.

Reclamation Standards:

Water: Methods must be used to avoid pools of water that are "noxious, odorous or foul."

Topsoil: Topsoil must be conserved and restored unless conditions do not permit.

Grading: "Final slopes...shall be at an angle to minimize the possibility of slides and be consistent with the future use of the land."

Revegetation: The type of cover and methods of establishment shall "conform to accepted and recommended agronomic and reforestation practices..."

Inspection: The Department may enter at any reasonable time, and must inspect at least once per year and after the operator files a completion report.

Local Role: The statute does not apply if county laws are at least as restrictive.

Bond Requirements:

Amount: Maximum of \$750/acre, with minimum of \$7,500 unless this amount is unreasonable.

Release: Release follows notification by the operator and inspection by the Department.

Penalties: If the operator fails to perform in accordance with his mining and reclamation plan, the Department can seek forfeiture of the bond. Operation without a permit is punishable by a fine sufficient to cover reclamation costs, but not to exceed \$25,000.

MASSACHUSETTS

Summary: Mining activity in Massachusetts is very limited, and the only statewide regulation of surface mining applies to coal.

Major Minerals: Stone, sand and gravel, lime, clays.

Statute: None.

State Contact: Joseph Sinnott.

MICHIGAN

Summary: The Michigan statute was initially sponsored by the Iron Mining Association, and is very brief. The implementing rules and regulations are somewhat more detailed, but considerable discretion remains with the administrative agency. For example, the Department of Natural Resources may require a bond or security, and may require the operator to prepare an "environment plan." If the latter is approved, it is known as a reclamation plan, and "compliance with the plan...fulfills the requirements of the act..." (The operator is entitled to submit a plan for approval whether or not requested by the agency). The statute explicitly provides that the Department may grant variances from whatever rules it adopts.

Interesting features include the lack of a requirement for a mining permit, and the fact that there are no civil or criminal penalties provided for violations of the act.

"Extraction of" or "mining" of sand from dunes along Lake Michigan is regulated under the "Sand Dune Protection and Management Act of 1976."

Major Minerals: Iron ore, sand and gravel, stone, gypsum, copper.

Statute: "Mine Reclamation Act of 1970" (18 Michigan Statutes Annotated, sec. 594).

Rules: Effective 11/16/76.

Coverage: All solid materials except clay, gravel, marl, peat, or sand.

Administering Agency: Geological Survey, Department of Natural Resources.

Staff: Eight.

Mining Permit: No permit is required. An annual "plan map" must be submitted by each operator.

Reclamation Standards: The statute does not specify standards, but allows promulgation of rules designed to prevent erosion, damage to fish and wildlife, water pollution, and hazards to people and property. Rules can also require revegetation when it can "reasonably be accomplished within practical limitations." The rules adopted are relatively detailed, and provide different standards for reclamation of open pits, stockpiles, and tailings basins and auxiliary lands, respectively. Prevention of erosion appears to be the primary underlying rationale for most of the rules.

Inspection: The Department may enter if reasonable prior notice has been given to the operator.

Bonding: Security may be required by the Department if there is reasonable doubt regarding the operator's financial ability to comply with the law and regulations.

Amount: By rule, the amount is equal to the expected cost of reclamation.

Release: Release occurs when the mining area reclamation has been completed and approved by the Department.

Penalties: The rules provide that the Department "shall look to the surety...for correction of unsatisfactory conditions not otherwise corrected."

Other Provisions:

Agency Analysis: Before adopting rules and regulations, the Department was required to conduct a comprehensive study of the effects of mining on the environment, future land use, and wise use and protection of resources. The economic effects of regulations were also to be considered.

Exploration Permits: Although no exploration permit is required, land disturbed by exploration activities must be graded and revegetated "within practical limitations and in a manner acceptable to the (Department)."

MINNESOTA

Summary: The Minnesota statute applies only to metallic minerals. The statute itself is brief, but mandates promulgation of detailed rules following a "comprehensive study and survey...to determine the extent to which regulation of mining areas is necessary in the interest of the general welfare." The resultant rules are quite detailed, and require the operator to provide considerable natural resource information, but a procedure for obtaining variances is also provided. The rules are unusual in terms of extensive provisions for controlling dust. The statute provides that "where (the) rules conflict with other applicable statutes, rules and ordinances, the most restrictive provision will apply." It also requires that the Department "develop procedures that will identify areas or types of areas which, if mined, cannot be reclaimed with existing techniques to satisfy the rules and regulations promulgated."

Major Minerals: Iron ore, sand and gravel, stone, and clays.

Statute: 93 Minnesota Statutes, sec. 44-51.

Rules: Rules have been adopted and periodically amended.

Coverage: Metallic minerals.

Administering Agency: Department of Natural Resources.

Staff: Seven.

State Contact: William C. Brice.

Mining Permit: A permit is required whose duration is the life of the proposed mining operation. The application must be accompanied by a mining and reclamation plan and other information as required by the Department. The permit can be suspended or revoked for cause.

Reclamation Standards: No standards are provided in the statute. The standards cited below are drawn from the rules as adopted.

Water: Watershed modification must be minimized, as must "adverse water quality and quantity effects on receiving waters."

Grading: The grading requirements are quite detailed and extensive.

Toxic wastes: The Department must require one or more of several listed actions whenever a water quality problem has or is likely to result from leaching of stockpiled materials.

Revegetation: Detailed revegetation requirements are specified.

Inspection: Rules provide for inspection after reasonable prior notice.

Local Role: The operator must publish notice of his permit application, and a public hearing is required if objections are submitted by affected landowners or local units of government. The rules provide that the proposed subsequent land uses, which must specifically be approved by the Department, are to be selected based on seven specified factors, including "compatibility with local land use plans and plans of the surface owners."

Bonding: The Department may require a bond if there are reasonable doubts about the operator's financial capacity to comply with the law, and must require a bond if the operator fails to comply.

Amount: By rule, the extent of the bond must be sufficient to enable the Department to satisfactorily accomplish reclamation.

Release: The bond is released following successful reclamation.

Penalties: Civil and criminal penalties are provided, in addition to the possibility of bond forfeiture.

Exploration Permits: No special exploration permit exists, but "mining" is defined in the rules to include "exploration activities such as the taking of large bulk samples," which would then require a mining permit.

MISSISSIPPI

Summary: The Mississippi regulatory program is based on a statute passed in 1977. It is quite comprehensive in scope, and provides for differential treatment of the mining of construction materials. Some notable features include the active role assigned to local soil conservation districts, unusually detailed inspection provisions, a required hearing prior to bond release, and a rather lengthy list of reclamation requirements. An unusual provision requires review and comment on permit applications by several agencies of state government. An inventory of mining activity throughout the state is currently underway. Until recent passage of a surface coal mining law, the same law would have applied to all minerals.

Major Minerals: Sand and gravel, cement.

Statute: "Surface Mining and Reclamation Act," 1977 (Mississippi Code Annotated, Title 53, Chapter 7).

Rules: Effective 4/15/78.

Coverage: All minerals except coal and lignite.

Administering Agency: Geological, Economic and Topographical Survey.

Staff: Five.

State Contact: Michael Bograd.

Mining Permit: A permit is required, whose duration is five years. For non-construction materials, a public hearing is required before a permit can be issued. For construction materials, a temporary permit is automatically granted when the operator files a notice of intent accompanied by a proposed reclamation plan and security based on estimated reclamation costs; it becomes a permanent permit when the reclamation plan is approved and a permanent bond requirement is established, or if the agency fails to act within forty-five days. All applications require submission of a fee and reclamation plan, and a bond must be posted prior to issuance of a permit.

Reclamation Standards: The statutory list of standards, from which the standards below are excerpted, is very lengthy. Alternative reclamation methods may be approved where required to restore the affected acreage.

water: The operator must "minimize the disturbances to the prevailing hydrologic balance...and to the quality and quantity of water in surface and groundwater systems" by several specified means.

Topsoil: It is to be separated and preserved "in a usable condition for sustaining vegetation." The operator may petition for exemption where other soil strata are better able to support vegetation.

Grading: The area must be returned to the "nearest approximate original contour," but lakes and ponds may be constructed as part of an approved reclamation plan.

Highwalls: They must be eliminated.

Toxic wastes: They must be "treated or disposed of in a manner designed to prevent contamination of ground or surface waters or combustion."

Revegetation: It is required as appropriate to attain "a useful, productive and beneficial purpose."

Inspection: On the ground inspection is required prior to granting a permit, and prior to releasing the bond, but may be conducted by the local soil and water conservation district. Other inspections are to "occur on an irregular basis at a frequency necessary to insure compliance..." They are to occur during normal operating hours when practical, but need not involve prior notice. Inspection reports are to be filed and a copy made available to the operator. Insofar as practical, the agency is to create a system for rotation of inspectors.

Local Role: Applicants for a permit for mining of non-construction minerals must publish notice of their application. The agency must notify local government units 30 days in advance of the hearing. The local soil and water conservation district is entitled to receive a copy of all permit applications directly from the operator. The agency is to file a copy of each application with the county clerk where the mining will occur.

Bond Requirements:

Amount: \$500-\$2,500/acre, based on estimated reclamation costs.

Release: The operator files an application for release, a copy of which is filed by the agency with the relevant county clerk. A hearing must follow inspection and evaluation by the agency or the local conservation district. Up to 90% of the bond may be released when the operator has suitably completed

"backfilling, regrading, and drainage control" in accordance with the approved reclamation plan, except that the unreleased portion must remain adequate to "assure completion of the reclamation work by a third party in the event of default by the operator." This remaining amount cannot be released for at least two years following partial release.

Penalties: In addition to bond forfeiture, both civil and criminal penalties are provided for violation of the statute and the rules and orders issued thereunder.

Other Provisions:

Protection of Mining: The operator must "conduct operations in a manner consistent with prudent mining practice, so as to maximize the utilization and conservation of the resource being recovered."

Exclusion of Mining: The statute contains provisions for designation of areas unsuitable for mining. Several criteria for possible designation are specified, and petition procedures are established for such designation or to have such designation terminated.

Substitute Lands: At its discretion, and with the consent of the surface owner and lessee, the agency can permit reclamation of substitute lands in lieu of lands to be affected by the activity for which a permit is sought.

Exploration Permits: Rules have been promulgated under statutory authority provided to regulate exploration activities. A permit is required, and the same reclamation standards are applicable as to mining activities.

Natural Resource Information: The information requirements for receipt of a permit are also comparatively comprehensive, and the agency must require a permittee to "install, use and maintain any necessary monitoring equipment for...observing and determining relevant...effects of the mining operation or reclamation program."

MISSOURI

Summary: Missouri has two statutes applicable to surface mining of minerals other than coal. The "Strip Mine Law" (444 M.S.A., sec 500-755) applies to barite and tar sands as well as coal. The second statute regulates the surface mining of clay, limestone, sand and gravel, and is summarized in the paragraphs that follow. The requirements for coal mining are more restrictive than for the other minerals covered.

No regulations covering minerals other than coal have yet been promulgated, but work will soon begin on drafting such regulations. An interesting feature of Missouri law is that no general fund monies can be used to support the administration and enforcement of the two statutes. Draft legislation has been prepared to increase fees and to allow the Land Reclamation Commission to invest the revenue in the Mined Land Reclamation Fund for its own purposes.

Major Minerals: Lead, clays, stone, iron ore, barite.

Statute: "Land Reclamation Act of 1971" (444 Missouri Statutes Annotated, sec. 760-786).

Rules: None.

Coverage: Clay, limestone, sand and gravel.

Administering Agency: Land Reclamation Commission in the Department of Natural Resources.

Staff: Three.

State Contact: Michael McCrate.

Mining Permit: A permit is required, and must be renewed annually. The permit application must be accompanied by a fee and security, and a permit must be issued within ten days of application.

Reclamation Standards:

Grading: Affected land which is to be used for forest or pasture must be graded to a minimum width of 20' at the top of each ridge. Land designated for crops must be traversible by appropriate farm machinery.

Toxic wastes: They are to be covered to a depth of four feet with "earth that will support plant life."

Revegetation: The plantings must "be appropriate to the type of reclamation designated by the operator and shall be based upon the recommendation of technically trained foresters and agronomers."

Inspection: The Commission is authorized to make investigations and inspections as necessary to assure compliance, and may enter affected lands "at all reasonable times."

Local Rule: The statute does not apply if other government regulations are more stringent.

Bonding:

Amount: Security of \$500/acre must be provided unless reduced at the Commission's discretion.

Release: The bond must be released after the Commission has determined that all requirements of the Act have been met with respect to the land in question.

Penalties: The bond is subject to forfeiture for violation of the statute; operation without a permit is classified as a misdemeanor punishable by a fine.

MONTANA

Summary: Montana's surface mining program is based on four statutes dating from the early 1970's, two applicable only to coal and uranium, one to metallic minerals, and one to several other specific minerals. Rules and regulations have been promulgated to implement each piece of legislation. The statutes are similar in structure, but differ in terms of their stringency. For example, a uranium mining operation must submit a "plan for mining, reclamation, revegetation and rehabilitation of the land and water to be affected by the operation. Such plan shall reflect thorough advance investigation and study by the operator." By contrast, operators of mines for non-metallic minerals other than coal or uranium can request that the Board of Land Commissioners provide recommendations regarding reclamation of the site. Although the terminology differs somewhat, a mining permit is required for all minerals, and special exploration permits are needed for uranium and metallic minerals. The statutes have few unusual features, but one interesting provision applicable to coal, uranium, and metallic minerals specifies that revocation of a permit results automatically in suspension of any other permits held by the same operator.

Major Minerals: Coal, sand and gravel, copper, stone, phosphate rock, talc, and graphite.

Statutes: Title 62, Chapter 4, Montana Code Annotated.

Rules: Administrative Rules of Montana (7/1/80).

Coverage: Coal, uranium, metallic minerals, bentonite, clay, scoria, phosphate rock, and sand or gravel.

Administering Agency: Board of Land Commissioners, Department of State Lands.

Staff: Ten

State Contact: Bruce Hayden.

Mining Permit: A mining permit is required for coal, uranium, and metallic minerals. A contract with the Board must exist prior to mining the other covered minerals. In all cases, the application must be accompanied by a fee, bond, and mining and reclamation plans.

Reclamation Standards: The standards differ somewhat depending on the minerals involved. The standards below are derived directly from the statutes. Specific standards are subject to variance where appropriate.

Water: For uranium mining, the operator must "impound, drain, or treat all runoff...so as to reduce soil erosion, damage to grazing and agricultural lands, and pollution of surface and subsurface waters." For metallic minerals, the concern is avoidance of stagnant water accumulation. The statute applicable to other minerals does not specify a standard.

Topsoil: For uranium and coal mining, topsoil and other media capable of supporting plant life must be separated, preserved and returned as a top layer. There is no topsoil requirement specified for metallic minerals, and the standard for the remaining minerals covered applies only when the Board so requires.

Grading: No grading standard is specified for metallic minerals. For coal and uranium, the land must be returned "to the approximate original contour." For the other covered minerals, the standard is commensurability with the "topography sought and land use designated."

Highwall: The only mention of highwall reduction is for coal and uranium. "All highwalls must be reduced and the steepest slope of the reduced highwall shall be no greater than 20 degrees from the horizontal."

Toxic wastes: For coal and uranium mining, wastes must be stockpiled and protected from erosion until they can be buried "under adequate fill." The requirements for metallic minerals mining are rather extensive and include burial under at least two feet of non-toxic materials. Other mine operators must take steps, where needed, to prevent acid drainage.

Revegetation: Coal and uranium miners must establish a "diverse, effective and permanent vegetative cover...capable of self-regeneration and plant succession at least equal in extent of cover to the natural vegetation of the area..." Revegetation of lands affected by metallic minerals extraction is required if appropriate to future use of the land. Other operators covered by the statutes must, "to the extent reasonable and practical,...establish vegetative cover commensurate with the proposed land use."

Inspection: The Department must make "investigations and inspections necessary to insure compliance." A condition of the coal and uranium mining permit is the right of entry without advance notice. If an inspection is based on information provided by an interested individual, that individual is entitled to accompany the inspector. Metallic mineral operations may be inspected at all reasonable times, but must be inspected prior to permit issuance and at least annually thereafter. Other operations may be inspected at all reasonable times.

Local Role: No local role is provided, although coal and uranium operators must publish notice of their permit application.

Bonding:

Amount: The Board sets an amount of at least \$200/acre, which must be sufficient to allow the state to complete the work described in the reclamation plan. Different upper limits are set depending on the statute and mineral involved. The statute covering minerals other than coal, uranium and metals allows operators to pledge lands, facilities and improvements instead of filing a bond, if this is acceptable to the Board.

Release: Partial release prior to revegetation is possible only for coal and uranium operators, but the remainder must be retained for several years to assure that revegetation has been successful. Final release is conditioned on compliance with all provisions of the statute and rules.

Penalties: Civil fines are provided for all violations of the statutes dealing with coal, uranium and metallic minerals. The remaining statute provides that operation of a surface mine without having entered into a contract with the Board is a misdemeanor punishable by fine.

NEBRASKA

Summary: The state of Nebraska does not regulate surface mining operations, which are limited in scope and involve only construction materials.

Major Minerals: Sand and gravel, stone.

Statute: None.

State Contact: Jay Ringenberg.

NEW HAMPSHIRE

Summary: The New Hampshire statute regulating mining activities is of recent origin, and imposes relatively stringent and comprehensive requirements on operators covered by the law. The state is unusual insofar as separate legislation was enacted to require local regulation of operations involving the mining of construction materials. Sand, gravel and construction aggregate operations are not subject to state regulation, but the state law (N.H.S.A., Ch. 155-D) requires that a permit be obtained from local authorities, and imposes reclamation duties upon operators.

The stringency of the state regulatory program is mitigated by the fact that the most important current mining activities are excluded from coverage, and the rules and regulations do not tighten up the statutory provisions. However, the statute does cover the considerable minerals exploration activities now occurring; this is probably its major significance. An interesting feature of the New Hampshire statute is its inclusion of provisions for the supervision of the leasing of state-owned lands for mining operations.

Major Minerals: Sand and gravel, stone, clays.

Statute: New Hampshire Statutes Annotated , Ch. 12-E.

Rules: Adopted 11/19/80.

Coverage: Excludes sand, gravel, and construction aggregate.

Administering Agency: Division of Forests and Lands, Department of Resources and Economic Development.

Staff: One.

State Contact: William Bonin.

Mining Permit: A permit is required. The application must be accompanied by a fee and include mining and reclamation plans. The operator must include in his mining plan a detailed description of "the drainage area above and below the site, the hydrology and geology of the area, the topography, and extensive soil data." No permit will be issued until security has been provided. The permit can be revoked for actions inconsistent with the statute, rules, or the permit. The mining permit shall be denied if mining is proposed for an area "unsuitable...because of historical, archaeological or environmental reasons." Prospecting permits are required and conditions may be attached "to minimize the environmental damage of such activities."

NEVADA

Summary: Nevada's mining statutes do not impose reclamation requirements.

Major Minerals: Copper, sand and gravel, clay, gypsum, barite, precious metals.

Statute: None.

State Contact: Hugh Ricci.

Reclamation Standards:

Water: Impoundments are not to "degrade the water quality below ...standards established pursuant to applicable federal and state law in the receiving stream"...and "shall not result in the diminution of the quality or quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational or domestic uses."

Topsoil: It is to be separated and preserved unless it is insufficient in quantity or quality to sustain vegetation, in which case other strata "best able to support vegetation for successful reclamation" are to be separated and preserved."

Grading: Except for surface quarries in bedrock, the site must be returned to a "comparable natural contour" unless another topography is suited for another intended use.

High wall: Grading requirements involve a restoration of "comparable natural contour," defined to include elimination of all highwalls.

Toxic wastes: They are to be "disposed of in a manner consistent with applicable state law designed to prevent contamination of ground or surface waters."

Revegetation: It is required unless approval has been given to a land use not requiring revegetation. Where vegetation must be reestablished, it is to be "diverse, effective and permanent..."

Inspection: The Department is authorized to make "announced or unannounced inspections and investigations" and to "make inspections based on a citizen complaint." The operator must designate an agent to accompany the inspectors.

Local Role: Proposed land uses may not be "inconsistent with applicable land use policies and plans." The operator is obliged to publish notice of his permit application, and to notify nearby landowners. An interested party may request a hearing, which shall be held if good cause is shown.

Bond Requirements:

Amount: The Department establishes the amount of the required security, which must be at least \$1,000/acre. In setting the amount, the character of adjacent lands, estimated reclamation costs, and the future suitable land uses are to be considered. The adequacy of the amount is to be reviewed at least once every three years.

Release: Release occurs when reclamation of the affected area has been conducted to the Department's satisfaction, but no bond may be released sooner than three years from its filing.

Penalties: The Department is empowered to seek forfeiture or revoke the permit for violation of the statute or the rules and permits issued. Civil penalties are also prescribed for violations.

NEW JERSEY

Summary: Surface mining in New Jersey is subject only to general environmental laws and regulations

Major Minerals: Sand and gravel, zinc, stone, clay.

Statute: None

State Contact: Ken Koscnex.

NEW MEXICO

Summary: New Mexico's regulation of surface mining applies only to coal, and there is no significant effort underway to extend it to cover other minerals.

Major Minerals: Copper, salts, uranium, sand and gravel, stone.

Statute: None.

State Contact: Emory Arnold.

NEW YORK

Summary: Reclamation standards imposed by the New York program are established by regulation or specified by the operator in his approved reclamation plan. An interesting feature of the statute is explicit reference to the fact that operators are not exempted from "the provisions of any other law or regulation requiring a permit." The Department of Environmental Conservation is trying to achieve legislative changes directed toward streamlining the regulatory program.

Major Minerals: Clay, stone, zinc, salt, sand and gravel, illmenite, magnetite.

Statute: "Mined Land Reclamation Law," 1976 (Article 23, Title 27, Environmental Conservation Laws of New York Annotated).

Rules: Rules have been adopted, and are periodically amended.

Coverage: All minerals.

Administering Agency: Department of Environmental Conservation.

Staff: Ten.

State Contact: Breck Trautwein.

Mining Permit: A permit is required. The permit application must be accompanied by a fee and mined land use plan. The permit shall be issued upon approval of the application and receipt of appropriate security. The permit can include "such conditions as may be required to fulfill the purposes of the statute," and may be suspended or revoked for "repeated or willful" violations of the statute, rules, permit, or provisions of the mined land use plan.

Reclamation Standards: The mined land use plan includes a reclamation plan which is to "indicate specifics covering revegetation, disposal of debris, refuse, tailings, waste or spoil, planned water impoundments and grading plans conforming to the rules, regulations, and orders adopted" pursuant to the statute. The promulgated rules and regulations elaborate at length on this provision, and include such standards as those cited below.

Water: The operator must make every reasonable effort...to minimize the disturbance of the prevailing hydrologic balance of and adjacent to the mine."

Grading: It must be conducted in a manner "compatible with the surrounding terrain and shall be based upon the natural characteristics of the material" graded, and must be "consistent with the applicant's land use objective."

Toxic Wastes: Disposal of refuse must be accomplished in a manner such that fumes and leachate "shall not cause or contribute to a condition in contravention of the classifications and standards of quality and purity of the air and waters of the state."

Revegetation: It is required "where vegetation is indigenous to the area and where revegetation is consistent with the land use objective as designated in an approved mined land use plan."

Inspection: The Department must inspect areas subject to reclamation, but may contract with the local soil and water conservation district for this purpose.

Local Role: The applicant for a mining permit must notify adjacent landowners and "officials of local governments having jurisdiction over the proposed site or over areas likely to be affected by the operation." The Department must notify these same parties regarding approval or disapproval of the application. By regulation, the Department has provided for consideration of comments submitted in response to the above notice. The statute is not to be construed to prevent local government from imposing "stricter mined land reclamation standards or requirements than are found in the statute."

Bonding:

Amount: The amount is determined by the Department.

Release: Release is based upon "faithful compliance" with "all requirements relating to the reclamation of land affected by mining."

Penalties: In addition to forfeiture of security, the Department can impose a lien upon the operator's mining equipment. By rule, the Department claims the right to impose a civil penalty for violations.

NORTH CAROLINA

Summary: The act regulating surface mining in North Carolina is a fairly typical permitting statute. It will be up for review in 1981 under the state's "sunset law." The Government Evaluation Commission is to study the administration of the statute and make recommendations to the legislature. The Commission staff has recommended that there be provision for a public hearing prior to granting a permit, that the amount of bond required be increased, and that the penalties apply to all violations rather than only to operation without a valid permit. Whether the Commission and the legislature will enact these changes is uncertain, but it is likely that the statute will be reenacted in a similar form.

Major Minerals: Stone, phosphate rock, lithium minerals, sand and gravel, clay.

Statute: "Mining Act of 1971" (Chapter 74, Article 7, North Carolina General Statutes).

Rules: Revised effective 1/1/78.

Coverage: All minerals.

Administering Agency: Mining Commission, Department of Natural Resources and Community Development.

Staff: Six to seven.

State Contact: Steve Conrad.

Mining Permit: A permit is required, with a term not to exceed ten years. A reclamation plan must be approved before the permit is issued, and a bond must be posted. The conditions of the permit can be modified after a hearing.

Reclamation Standards: The statute specifies that the reclamation plan must address specific elements and must include such other information "reasonably required by the department." The plan can be approved without calling for reclamation of all lands, provided that treatment of these lands is not feasible and all practical steps are taken to limit the extent of such untreated lands.

Water: No "noxious, odious, or foul" collections of water may result from mining and reclamation.

Grading: Final slopes in unconsolidated materials must be such as to "minimize the possibility of slides and be consistent with the future use of the land."

Revegetation: The types and methods must be specified in the reclamation plan.

Inspection: The Department may inspect at any reasonable time, and must inspect annually and after a report of reclamation completion is filed.

Bond Requirements:

Amount: \$2,500-\$25,000, depending on acreage.

Release: When the operator notifies the Department that reclamation is complete, and the Department verifies that it has been properly completed, the bond is released.

Penalties: The permit can be suspended or revoked for cause, and the bond can be forfeited. In case of forfeiture, the operator remains liable for reclamation costs in excess of the bond. Civil and criminal penalties are provided for operating without a permit.

NORTH DAKOTA

Summary: North Dakota's reclamation law applies only to coal, although it also applied to sand and gravel until the mid-1970's. There is a statute requiring sand and gravel operators, along with other non-coal producers, to file an annual report on their operations. The Soil Conservation Commission consolidates the report and forwards copies to local soil conservation districts. However, there is no statutory sanction for non-compliance, and a few operators fail to report.

Major Minerals: Coal, sand and gravel, peat, clay.

Statute: Title 38, Chapter 16, North Dakota Century Code.

Administering Agency: Soil Conservation Commission.

State Contact: Blair Scramstead.

OHIO

Summary: The Ohio regulatory program contains performance standards that are more comprehensive and detailed than in most states. On the other hand, as revealed in the matrix, the statute lacks certain features included in many other states. One unusual feature of the Ohio statute is a provision that the Department of Natural Resources may, following complete review, propose amendments to the mining and reclamation plan at the half-way point of the ten year permit period; concurrence in the amendments by the operator, however, is required before they become effective.

Major Minerals: Coal, stone, lime, sand and gravel, clay.

Statute: Ohio Revised Code, Chapter 4514.

Rules: Rules have been adopted, and are periodically amended.

Coverage: Excludes coal and peat, except the statute covers coal mining incidental to extraction of other minerals.

Administering Agency: Division of Reclamation, Department of Natural Resources.

Staff: Eight.

State Contact: Gordon Hufford.

Mining Permit: A permit is required, with a ten year term, and annual reporting. The application must be accompanied by a "complete plan for mining and reclamation of the area to be affected." The permit can be revoked for violation of the statute or failure to perform in accordance with the approved plan of mining and reclamation.

Reclamation Standards: The statute contains general performance standards such as those cited below. The rules promulgated under the statute go on to specify in considerable detail what the operator must do in order to attain the standards.

Water: The operator must "control soil erosion and sedimentation..., insure that contamination...of underground water supplies is prevented..., and insure that any lake or pond...(is) free of substances resulting from mining

in amounts or concentrations that are harmful to persons, fish, waterfowl, or other beneficial species of aquatic life."

Topsoil: It must be stored if required to "raise and maintain a diverse growth of vegetation adequate to bind the soil and control soil erosion and sedimentation."

Grading: Grading must be "sufficient to achieve soil stability and control landslides, erosion, and sedimentation."

Highwall: They "will be permitted if they are compatible with the future uses specified in the plan and measures will be taken to insure the public safety."

Toxic Wastes: They must be dealt with "in a manner that will minimize acid drainage and the accumulation of acid wastes."

Revegetation: Unless the intended future land use does not require revegetation, the operator must "(e)stablish a diverse vegetative cover...capable of self-regeneration."

Inspection: The Department may enter "at reasonable times for the purpose of determining ...compliance..." After the operator files notice of completion of reclamation activities, the Department "shall make an inspection and evaluation of the reclamation..."

Local Role: The reclamation plan must ensure that the proposed future land uses do not conflict with approved zoning or other comprehensive plans in the area.

Bond Requirements:

Amount: \$500/acre, but not less than \$2,000

Release: The operator can seek release of 50% of the bond upon completion of all reclamation other than required planting. Release will be ordered "if the (Department) finds that the reclamation meets the requirements of (the statute), rules adopted thereunder, any orders issued during the mining and reclamation, and the specifications of the plan for mining and reclaiming."

Penalties: If the security is forfeited due to failure to meet reclamation requirements, the operator remains liable for any additional expenses incurred in accomplishing reclamation. Civil penalties differ according to the type of violation.

OKLAHOMA

Summary: No rules and regulations have been issued under the Oklahoma statute, the provisions of which are not particularly stringent when compared to those of other states. No major changes in the law are envisioned, but an increase in the amount of the bond is likely to be proposed.

Major Minerals: Coal, stone, sand and gravel, clay, gypsum, shale, salt, volcanic ash.

Statute: "Mined Lands Reclamation Act of 1971" (45 Oklahoma Statutes Annotated, sec. 721-738).

Rules: None.

Coverage: All minerals (except coal).

Administering Agency: Department of Mines and Mining.

Staff: Five to six.

Mining Permit: A mining permit is required; it must be issued when the application is accompanied by a fee, security, and a reclamation plan. The permit can be revoked for violation of the statute.

Reclamation Standards:

Grading: Ridges and peaks of overburden must be graded to a rolling topography suitable to the specified land use, but need not be less than the original slope. Also, "the slope of the ridge of overburden resulting from a box cut need not be reduced to less than 25 degrees from the horizontal."

Toxic Wastes: They must be covered by a permanent water impoundment or to a depth of three feet with material that will support plant life.

Revegetation: Except for lands to be used for lakes or industrial or residential sites, there must be appropriate planting for the final land use. However, planting is not required "so long as the chemical and physical characteristics of the soil...are such...as to seriously inhibit plant growth."

Inspection: Inspection can be undertaken by the Department at all reasonable times.

Bonding:

Amount: \$350-650/acre, with \$1,000 minimum (\$5,000 for copper), but exceptions are allowed.

Release: Up to 80% may be released after grading is completed.

Penalties: If, after a finding of a violation, the operator fails to perform corrective work, the Department may contract to have the work done, and seek damages from the operator not exceeding the face amount of the bond.

OREGON

Summary: In addition to the 1971 permitting statute discussed below, there is a statute governing mining with a dredging machine. That statute, to be administered by a different agency, is quite similar but is inactive since no dredge mining is occurring in Oregon.

Like the neighboring state of Washington, a provisional permit can be obtained pending approval of the reclamation plan. The bond amount is limited to \$500/acre, penalty provisions are mild, and enforcement staff is limited.

Major Minerals: Stone, sand and gravel, cement, nickel, volcanic deposits.

Statute: 517 Oregon Revised Statutes, sec. 750-900.

Rules: Adopted June, 1980.

Coverage: All minerals.

Administering Agency: Department of Geology and Mineral Industries.

Staff: Four.

State Contacts: Paul Lawson, Stan Hamilton.

Mining Permit: A permit good for the life of the mine is required, and may be modified by agreement between the Department and the operator. The application must be accompanied by a fee and a reclamation plan. Once a bond is posted, a provisional permit may be issued pending approval of the reclamation plan; any permit is "subject to reasonable limitations that may be prescribed by the Department."

Reclamation Standards: The standards cited below are derived from the rules and regulations promulgated under the statute.

Water: Stagnant water must be prevented, natural drainage must be protected and restored, groundwater must not be contaminated, and sediment must be controlled.

Topsoil: Topsoil or "equivalent growth media material" must be isolated and stored to achieve required revegetation.

Grading: The final land form "must be consistent with the approved subsequent beneficial use." Slope limitations are specified, but exceptions are possible.

Revegetation: Disturbed areas must be "revegetated with plants...native or suitable to the area, when such planting is necessary to stabilize the surface, prevent undue runoff, and restore the surface in a manner best suited for its future intended use."

Inspection: The Department must inspect the mining area upon receipt of an application, and may inspect at all reasonable times with advance notice to the operator.

Local Role: Passage of the statute did not supersede existing local ordinances, but subsequent local ordinances do not apply unless approved by the Department. In addition, the Department must consult with "appropriate local planning authorities" before approving a reclamation plan.

Bonding:

Amount: It is equal to the estimated cost of completing reclamation work, but cannot exceed \$500/acre.

Release: The bond is released upon "completion in accordance with the reclamation plan."

Penalties: The fine for operating without a permit is limited to a maximum of \$1,000. The Department can complete reclamation if the operator violates the statute, but cannot spend more than \$500/acre.

PENNSYLVANIA

Summary: The Pennsylvania statute and regulations are not as comprehensive or detailed as might be expected given the size of the administration and enforcement staff (which also enforces health and safety standards). There is substantial administrative discretion, and the program depends on negotiation with the operator regarding the contents of his reclamation plan. A unique feature of the Pennsylvania statute allows the operator to pay the state 95% of what the bond premium would be, thus creating a fund that can be used for reclamation.

Major Minerals: Coal, clay, stone, lime, sand and gravel.

Statute: "Surface Mining Conservation and Reclamation Act," 1971
(52 Pennsylvania Statutes Annotated, sec. 1396).

Rules: Effective 5/12/75.

Coverage: All minerals.

Administering Agency: Department of Environmental Resources.

Staff: Eighteen.

State Contact: J. Anthony Ercole.

Mining Permit: The operator must obtain a license, and apply for a permit to mine particular lands. The permit application includes a site map and reclamation plan. No operations can commence until after security has been provided.

Reclamation Standards: The statute requires the reclamation plan to address such issues as topsoil treatment, planting program, soil erosion, contouring, and compliance with the Clean Streams Law. However, no specific standards are specified. The standards below are drawn from the regulations pertaining to minerals other than coal.

Water: Erosion and sediment control standards of the Department must be met, and water must be drained away from the mine operation.

Topsoil: "Sufficient topsoil and/or subsoil shall be separated and conserved or provided and restored to facilitate revegetation..." If

circumstances do not permit compliance, full explanation and development of alternatives is required.

Grading: "Design of the finished slope shall consider the inherent natural stability of the material, and no design shall be submitted...which exceeds the maximum natural stable slope unless effective measures are proposed to maintain stability." For operations involving unconsolidated materials, there must be a "blending" of transition between the reclaimed slope and the natural ground surface. Terracing and contouring is usually required.

Revegetation: The reclamation plan must include a planting program.

Inspection: The Department has the right to enter and inspect all surface mine operations to determine compliance with the statute.

Local Role: No local role is specified, but the inspection and enforcement efforts of the Department must be organized on a regional basis.

Bonding:

Amount: It is set to equal the total estimated cost to the state of completing the approved reclamation plan, with a \$5,000 minimum. A bond is not required of small operators.

Release: It occurs when reclamation is complete, but 5% may be retained for an additional five years as a "contingency allowance."

Penalties: Operation without a license has many serious consequences. If the bond is forfeited, any excess over reclamation cost may be used for other conservation or reclamation activities.

RHODE ISLAND

Summary: There is no statewide regulation of mining activities in Rhode Island, where mining operations are limited to construction materials.

Major Minerals: Sand and gravel, stone.

Statute: None.

SOUTH CAROLINA

Summary: The South Carolina statute is a fairly typical one. The only unusual feature is the absence of a permit application fee. Relatively detailed rules and regulations have only recently been adopted. These impose standards more specific than those provided in the statute because the Land Resources Conservation Commission is required by statute to deny a permit where the operation will have unduly adverse effects on wildlife or fisheries or will violate state pollution standards.

Major Minerals: Clay, stone, sand and gravel.

Statute: "Mining Act," 1973 (Title 48, Ch.19, Code of Laws of South Carolina).

Rules: Effective 7/18/80.

Coverage: All minerals, excluding "shells from coastal bottoms."

Administering Agency: Land Resources Conservation Commission.

State Contact: F.G. Scurry.

Staff: Six.

Mining Permit: A permit is required, with a term of up to ten years. It may be suspended or revoked for cause. The permit application must be accompanied by a reclamation plan; no permit becomes effective until security is posted and the reclamation plan is approved.

Reclamation Standards: The standards below are derived directly from the statute. Reclamation is not required where infeasible for particular areas, provided steps are taken to "minimize the extent of such areas."

Water: In no event are small pools to be allowed "that are, or are likely to become, noxious, odious, or foul..."

Grading: Final slopes must be such as "to minimize the possibility of slides and be consistent with the future use of the land."

Revegetation: The plan must specify "the type of vegetation cover and methods of its establishment" and "shall conform to accepted and recommended agronomic and reforestation restoration practices..."

Inspection: Inspection must occur "upon receipt of the operator's annual report or report of completion of reclamation" and may be conducted at other reasonable times.

Local Role: A copy of the plan must be sent to the local soil and water conservation district. The statute explicitly provides that applicable local regulations are not superseded unless they directly conflict with the statute.

Bonding:

Amount: It is based on acreage at a rate of approximately \$500/acre. The maximum is \$25,000 unless the Commission determines that a larger bond is necessary.

Release: Reclaimed lands are released from the bond after notification by the operator and inspection by the Commission.

Penalties: In addition to forfeiture, willful violations of the statute, rules and regulations, are classified as misdemeanors, punishable by a fine.

SOUTH DAKOTA

Summary: The South Dakota regulatory program is based on a rather lengthy and comprehensive statute which still provides considerable discretion to the administering agency. For example, the State Conservation Commission is authorized to require information such as the "baseline water quality of all aquifers potentially affected..., cross sections that depict sub-surface geology..., and the direction and gradient of groundwater flow." An interesting feature is that the reclamation plan is deemed approved if the Commission does not respond in writing within thirty days. A referendum was recently defeated that would have required a statewide vote to approve a permit for uranium mining.

Major Minerals: Gold, clays, stone, sand and gravel.

Statute: "Surface Mining Land Reclamation Act of 1971" (South Dakota Consolidated Laws, sec.45-6A).

Rules: Effective 2/20/79.

Coverage: All minerals.

Administering Agency: State Conservation Commission.

Staff: Four to five.

State Contact: William Harris.

Mining Permit: A permit is required. The permit application must be accompanied by a fee and a reclamation plan.

Reclamation Standards: The statute provides the Commission with considerable discretion in approving the reclamation plan. The standards cited below are drawn from the rules and regulations promulgated under the statute.

Topsoil: "Topsoil shall be removed separately and preserved in a manner to prevent its erosion and loss."

Grading: It shall be done "to achieve a contour that is most beneficial to the proposed land use."

Highwalls: They must be reduced to 25% "unless such a reduction would create conditions more detrimental than preserving the highwall."

Toxic wastes: They must be "covered and sealed...to prevent release into the groundwater, surface water or nontoxic materials...No toxic material shall be within eight feet of the topsoil after backfilling and grading."

Revegetation: It must be "accomplished in accordance with commission regulations."

Inspection: The Commission must inspect lands prior to issuing a permit, and is allowed to enter for inspection purposes thereafter. Upon request, the operator is entitled to receive a copy of the inspection report.

Local Role: The local county board of commissioners must be informed of permit applications, and is entitled to participate in the hearing where granting the permit is considered. Notice of exploration activities must be filed with the local register of deeds. The rules and regulations may be administered and enforced by the local conservation districts.

Bonding:

Amount: The security must be "an amount sufficient to cover the cost of reclamation as determined by the commission."

Release: Release occurs "upon showing by the operator that the (statute) has been complied with and his obligations fully performed."

Penalties: If the operator fails to perform the reclamation, the Commission is entitled to carry out the plan and proceed against the bond. Violation of the statute or rules constitutes a misdemeanor.

TENNESSEE

Summary: The minerals covered by the Tennessee permitting statute are a continuing source of controversy. Stone quarries are excluded, as is chert, although it was previously included. The Department of Conservation is considering draft legislation to include both, while operators would like to see the exclusion of sand and gravel operations. Separate regulations exist for each mineral.

Major Minerals: Coal, stone, zinc, cement, phosphate, chert, copper.

Statute: "Mineral Surface Mining Law of 1972" (Title 59, Chapter 8, sec. 201-228, Tennessee Code Annotated).

Rules: 12/12/75.

Coverage: All minerals except coal, chert, marble, limestone and dimension stone.

Administering Agency: Board of Reclamation Review; Division of Surface Mining, Department of Conservation.

Staff: Six to seven.

State Contact: Austin Gaines.

Mining Permit: A permit is required, with a term of one year. The application must be accompanied by a fee, bond, and mining and reclamation plan. The permit may be modified by agreement between the operator and the Board.

Reclamation Standards: The standards below are derived directly from the statute. Reclamation implies that the land be returned to "a condition whereby it can serve some purpose, at least as useful as that in existence before any mining."

Water: A drainage system must be designed to control erosion and pollution of waters.

Topsoil: The operator must submit to the Board and gain approval of a plan for "preparation of the soil and subsequent revegetation." Methods specified in the plan must be designed to stabilize the soil and take subsequent use into account.

Grading: The land must be returned "to approximately the original or rolling topography."

Highwalls: To the extent possible with available overburden, highwalls are to be eliminated.

Revegetation: See "Topsoil" above.

Inspection: The Department is authorized to inspect "as necessary to ensure compliance" with the statute, rules, and regulations. Inspection must occur prior to permit issuance and following notification by the operator of completion of the approved plan.

Local Role: Prior to applying for a permit, the operator must provide public notice in the local county where the mining will occur.

Bonding: The state bond requirement can be waived if the local county has required a bond of more than \$2,000/acre.

Amount: It must be set at a minimum of \$600/acre.

Release: After the first revegetation planting, all but \$300/acre is released; the remainder is retained until the revegetation plan has been successfully carried out.

Penalties: The operator's permit can be suspended or revoked after a warning. Civil fines are provided for all violations of the statute and rules; wilfull violation is a misdemeanor punishable by a fine and imprisonment.

TEXAS

Summary: Although the provisions of the Texas statute are extensive, uranium is the only mineral covered. Detailed regulations have been promulgated to implement the law. Opportunities for public hearings are more extensive than in most states, the inspection provisions are quite detailed, the reclamation standards are relatively stringent, and there are provisions for civil and criminal penalties. Unusual provisions include the possibility of self-bonding by responsible operators, specific application of criminal penalties to corporate officials, and a requirement that other state agencies must review and comment upon permit applications. Also, the Railroad Commission must "require each permittee to...install, use, and maintain necessary monitoring equipment for observing and determining relevant surface or subsurface effects of the mining operation and reclamation program."

Major Minerals: Clay, sand and gravel, stone, iron ore, salt, uranium.

Statute: "Uranium Surface Mining and Reclamation Act" (Ch. 131, Texas Natural Resources Code.)

Rules: Regulations have been adopted.

Coverage: Uranium and uranium ore.

Administering Agency: Railroad Commission.

Staff: Twelve to thirteen.

State Contact: J. Randel Hill.

Mining Permit: A permit is required, with a term not to exceed ten years. The application must be accompanied by a fee and a reclamation plan. After the permit has been approved, but prior to its issuance, a bond must be filed.

Reclamation Standards: The following standards are derived directly from the legislation.

Water: The operator must "minimize the disturbances to the prevailing hydrologic balance..."by taking several specified actions.

Topsoil: It must be separated and preserved, if available, and replaced on top of the land to be reclaimed. If unavailable, the best available subsoil must be used.

Grading: The grading requirements are flexible, and are designed to control erosion and sustain vegetation consistent with the anticipated subsequent use.

Toxic wastes: These materials must be "treated or disposed of in a manner designed to prevent contamination of ground or surface water..."

Revegetation: The standards are established in the approved reclamation plan, and the operator is responsible "for successful revegetation for a period of four years beyond the first year in which the vegetation has been successfully established as evidenced by the land being used as anticipated in the reclamation plan."

Inspection: The Commission is entitled to enter on and inspect any lands covered by the statute. Advance notice is prohibited, and inspection must occur "on an irregular basis at a frequency necessary to insure compliance ..." The operator is entitled to receive a copy of the inspection report, and the Commission is required, insofar as possible, to create a system of rotation of inspectors.

Bonding: If there is sufficient "history of financial solvency and continuous operation," the Commission may accept the bond of the operator without separate surety.

Amount: The amount depends on the reclamation requirements of the approved permit, and must be sufficient "to assure the completion of the reclamation plan if the work had to be performed by a third party..."

Release: The bond is released when the Commission is satisfied that reclamation has been accomplished as required by the statute. When the operator completes the "backfilling, regrading, and drainage control...as provided in his reclamation plan" the Commission can release up to 75% of the bond if the remaining amount is sufficient to assure third party completion. If significant objections are raised, a hearing must be held prior to bond release.

Local Role: The Commission must file for public inspection with the county clerk all permit applications and bond release applications pertaining to lands within the county. The Commission must also contact various local governmental bodies and nearby surface owners to give them an opportunity to submit written comments on the permit or bond release application. If the Commission deems the application to be of sufficient significance, a public hearing must be held in the locality affected.

Penalties: The mining permit can be suspended or revoked, after a hearing, for violations of the statute or permit conditions. Violations are subject to civil fines, and wilfull and knowing violations are subject to criminal penalties including the possibility of imprisonment. Criminal penalties can be applied to corporate officials.

Other Provisions:

Exclusion of Mining: The statute provides for designation of land unsuited for surface mining. After a permit application is received or any person petitions for designation of lands as unsuitable, the Commission must survey the lands and determine the suitability based on six statutory criteria.

Exploration Permits: While no exploration permit is required, written notice of exploration must be provided to the Commission, and the notice must include a reclamation plan.

Surface Effects of Underground Mining: "Surface mining" is defined to include "those aspects of underground mining having significant effects on the surface," so a permit would be required. However, "in situ" mining is specifically excluded from coverage.

UTAH

Summary: The Utan statute is phrased in general terms, and the regulatory program is dependent on rules and regulations. The reclamation standards, adopted by rule, leave the Division of Oil, Gas, and Mining with considerable discretion in approving reclamation efforts.

The statute explicitly calls for coordination of the regulatory program with those of federal and local authorities. The Division is obliged to "make every effort to have its rules, regulations, and procedures accepted by such other governing bodies as complying with their respective requirements." The statute also states that state agency approval of the notice of intent does not relieve the operator of his responsibility to comply with other applicable statutes, rules, regulations, and ordinances..."

Major Minerals: Copper, coal, gold, iron, phosphate rock, stone, clay, uranium, sand and gravel.

Statute: "Mined Land Reclamation Act," 1975 (Title 40, Ch. 8, Utah Code Annotated).

Rules: Rules and regulations have been adopted.

Coverage: All minerals.

Administering Agency: Division of Oil, Gas, and Mining of the Department of Natural Resources.

Staff: Nine to ten.

State Contact: James W. Smith, Jr.

Mining Permit: A notice of intent, which includes a reclamation plan, must be filed and approved by the Division, and a bond must be posted, before an operator can commence mining operations. No fee is required, and once approved, the notice of intent is valid for the life of the mining operation.

Reclamation Standards: The statute is silent with respect to specific reclamation standards, stating only three objectives of reclamation: (a) "To return the land...to a stable ecological condition compatible with past, present and probable future local land uses. (b) To minimize...environmental degradation...to the ecologic and hydrologic regimes and to meet other pertinent state and federal regulations...(c) To minimize or prevent future

hazards to public safety and welfare." The standards cited below are drawn from the rules promulgated under authority of the statute.

Water: "Natural channels...shall not be covered, restricted or rerouted...unless specifically approved by the division after a suitable hydrologic study and incorporating a sound hydraulic design."

Topsoil: "Except where slope or rocky terrain makes it impossible...(topsoil) shall be removed, segregated, and stockpiled according to its ability to support vegetation..." While stockpiled, it is to be protected from erosion and contamination.

Grading: If possible, regrading should be to a "rounded configuration." In no event "shall the slope of a pile or fill exceed the angle of the repose of the material or such lesser slope as required by the Division considering such factors as: land use, material properties, revegetation potential and erosion control."

High Wall: Slope is limited to 45 degrees or less, except that the Division can waive or modify this requirement.

Toxic Materials: They must be safely removed or isolated in a way that toxic emissions to the environment "are reasonably eliminated or controlled."

Revegetation: "Where possible, a self-sustaining vegetative cover...shall be established...on the entire area affected...using professionally accepted methods."

Inspection: Inspectors may enter "at all reasonable times" to administer the statute.

Local Role: The Division publishes its preliminary decision with respect to a notice of mining intent, and mails the decision to the local zoning authority. If written substantive objections are received, a public hearing must be held.

Bonding:

Amount: It is determined by the Division based on "the magnitude, type and costs of approved reclamation activities...and the nature, extent and duration of operations..." The amount should always be sufficient "to complete reclamation to an acceptable standard."

Penalties: The statute provides for withdrawal of approval of the notice of intent and for forfeiture of the bond, and provides fines for those who knowingly or willfully evade the statute.

VERMONT

Summary: Vermont permits surface mining activity within the context of its 1969 "Land Use and Development" statute, which specifies eleven criteria for assuring that environmental concerns are met. The operator, who must apply for a development permit from one of nine district environmental commissions, has the burden of showing that the project is consistent with the criteria. Permitting decisions are made within the context of the statute and state policy developed and incorporated in plans devised by the central Environmental Board. In developing a plan, the Board must give "full account and consideration" to "duly adopted regional...and...town plans," and must submit draft plans to regional and municipal planning commissions for comment.

An interesting feature is the requirement that any permit for extraction of "fissionable source material" (e.g. uranium) would have to be approved by the legislature. The statute is unusual in that it provides for protection of potential mining activities. Thus, a non-mining development in an area with high potential for mineral production must not "prevent or significantly interfere with the subsequent extraction or processing of the mineral..."

Major Minerals: Sand and gravel, stone, talc, asbestos.

Statute: Title 10, Chapter 151, Vermont Statutes Annotated.

Rules: None are applicable specifically to mining activities. Guidelines for exploration activity are being drafted.

Coverage: All minerals.

Administering Agency: Environmental Board.

Staff: Zero to one.

State Contacts: Richard Cowart, Charles Ratte'.

Mining Permit: Surface mining is an activity requiring a development permit. The permit application must be accompanied by a fee and a development plan. The permit can be revoked for violations.

Reclamation Standards: The Board or District Environmental Commission must find that several criteria are met before a development permit can be issued. Among them are findings that the development "will not result in undue water or air pollution," will cause no unreasonable soil erosion, "will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas," and will cause no

significant reduction in the productivity of prime agricultural soils. In addition to the general criteria, a development involving minerals extraction must not have an "unduly harmful impact on the environment or surrounding land uses and development." Also, the developer must show that the land will be left "in a condition suited for an approved alternative use or development."

Inspection: Whenever the Board and Commission deem inspection necessary, they must be granted entry to the affected lands.

Local Role: The operator must send a copy of his development permit application to local government and to municipal and regional planning commissions whose jurisdictions will be affected by the operation. Notice of the application must also be published. Any interested party may request that a public hearing be held regarding the granting of the permit. The statute also provides: "No permit shall be issued or denied by a district commission or environment board which is contrary to or inconsistent with a local plan, capital program or municipal bylaw governing land use unless it is shown and specifically found that the proposed use will have a substantial impact or effect on surrounding towns, the region, or an overriding interest of the state..."

bonding: There is no provision for bonding.

Penalties: Fines and imprisonment are provided for violations of the statute.

VIRGINIA

Summary: The Virginia regulatory program is based on a relatively general statute supplemented by regulations and by handbooks providing detailed operating guidelines for grainage control and revegetation. The general regulations promulgated to deal with mining operations deal differentially for three categories of mineral types: sand and gravel, clay and shale, and other. The statute creates a Board of Surface Mining Review whose single function is to "hear appeals from orders issued by the department (of Conservation and Economic Development) under (the statute)." A very interesting aspect of the law is an attempt to develop an alternative to the bond requirement by creation of a "Minerals Reclamation Fund."

Major Minerals: Coal, stone, cement, sand and gravel, clay.

Statute: Ch. 16 of Title 45.1, Code of Virginia.

Regulations: Dated 6/22/78.

Coverage: All minerals except coal.

Administering Agency: Division of Mined Land Reclamation, Department of Conservation and Economic Development.

Staff: Ten.

State Contact: Mike Abbott.

Mining Permit: A permit is required, whose duration is one year. The application is to be accompanied by a fee, map, and an "operations plan". A bond or other security must also accompany the application. The permit can be revoked for violations.

Reclamation Standards: The statute requires simply that the operations plan "describe the specifications for surface grading and restoration, including sketches delineating placement of spoil, stockpiles, and tailing ponds, to a surface that is suitable for the proposed subsequent use of the land..." The standards cited below are derived from the regulations issued under the authority of the statute.

Water: "All mining operations shall have adequate drainage, erosion, and sediment control measures" and "the pH of all water resulting from surface

mining of minerals shall be between pH 6 to pH 9." A "handbook" containing "approved design methods and technical standards...for drainage and sediment control measures" has been published.

Topsoil: It shall be stored "in such a manner as to remain available for reclamation."

Grading: The slopes proposed in the plan "must be in keeping with good conservation practices," and must be stabilized.

Toxic wastes: They "shall be covered with a material capable of shielding the toxic material and supporting a plant cover..."

Revegetation: A "handbook" has been published to facilitate revegetation, and supplements the regulations. The objective of the detailed revegetation regulations is achievement of "permanent and protective vegetative cover." More stringent regulations apply to "critical areas" where sediment will otherwise be deposited in streams and valleys and/or are difficult to revegetate.

Inspection: The Department is authorized to make "investigations and inspections to insure compliance." Inspection must occur before a permit is renewed.

Local Role: The applicant for a permit must certify that the chief administrative officer of the affected local political subdivision has been notified, along with nearby landowners, of the proposed surface mining operation. The Department can waive the statute's regulations within local jurisdictions where local regulations are at least as stringent as the state's.

Bonding:

Amount: \$200-\$1,000/acre.

Release: Bond is released annually on acreage for which the operator states under oath that reclamation has been completed.

Penalties: In addition to bond forfeiture, any violation of the statute or order issued thereunder is classified as a misdemeanor punishable by a fine or imprisonment.

WASHINGTON

Summary: The Washington program is based on a 1970 permitting statute. Unusual features include a provisional permit pending approval of the reclamation plan, and more attention to determining the post-mining land use than is found in most states.

Major Minerals: Clay, coal, sand and gravel, stone.

Statute: Chapter 78.44, Revised Code of Washington.

Rules: Adopted 10/20/70.

Coverage: All minerals.

Administering Agency: Board of Natural Resources.

Staff: Ten.

State Contact: Don Ford.

Mining Permit: A permit is required. The application must include operating and reclamation plans, and be accompanied by a fee. Once a bond is posted, a provisional permit must be issued pending plan approval unless the land is unsuitable for mining. Once issued, the permit may be modified for cause after a hearing. The reclamation plan must be approved annually.

Reclamation Standards: The basic objective is "to establish on a continuing basis the vegetative cover, soil stability, water conditions, and safety conditions appropriate to the intended subsequent use of the area." The plan must address a variety of potential problems. The standards below are derived directly from the statute.

Water: No stagnant water is allowed to collect; if streams will be affected, the mining operation must comply with state fisheries law.

Grading: Maximum slopes are provided for various materials, except quarry walls, and "the peaks and depressions of the spoil banks shall be reduced to a gently rolling topography which will minimize erosion and will be in substantial conformity with the immediately surrounding land area."

Toxic wastes: They must be covered by two feet of clean fill material, and surface water must be drained away from the area.

Revegetation: It must be conducted as appropriate to the future use of the land.

Inspection: The Board must inspect the lands upon receipt of an application and annually thereafter. They may also inspect at any other reasonable times.

Local Role: The end use specified by the operator must be consistent with local zoning and the surface owners of the affected land must concur.

Bonding:

Amount: It is set at the estimated cost of completing the reclamation plan, but must be between \$100 and \$2,500 per acre.

Release: The bond is released when reclamation has been properly completed.

Penalties: The Board is entitled to reclaim lands where the operator fails to complete planned reclamation activities within two years. If the amount of the forfeiture is inadequate to pay for the reclamation undertaken, a lien attaches to the land. The permit can be cancelled for cause, and operation without a permit is classified as a gross misdemeanor.

WEST VIRGINIA

Summary: The state's regulatory program has been based on a 1971 statute covering all minerals, including coal (W.V.C., sec. 20-6). In 1980, however, two laws were passed, one for coal, the other for minerals other than coal, that will become effective as soon as the coal program has been approved by the federal government under Sec. 503 of P.L. 95-87. The 1980 statute is summarized below, but there are no significant substantive differences as far as minerals other than coal are concerned. The statute recognizes that some areas are impossible to reclaim, and gives the Department of Natural Resources the power to "delete certain areas from all surface mining operations." The regulations promulgated under the 1971 statute are quite detailed and would be equally applicable under the new law. Given the current preoccupation with coal in West Virginia, and the relatively minor importance of other surface mining, major revisions are unlikely in the near future.

Major Minerals: Coal, stone, sand and gravel, clay.

Statute: Chapter 20, Article 6D, West Virginia Code.

Rules: Regulations effective in 1978 were promulgated under the 1971 law, and the portion dealing with minerals other than coal will likely remain applicable under the 1980 statute.

Coverage: All minerals except coal.

Administering Agency: Division of Reclamation, Department of Natural Resources.

Staff: Two to three.

State Contact: David C. Callaghan.

Mining Permit: A permit is required, with a one-year duration. The application must be accompanied by a fee, map, and reclamation and mining plan. Except for extraction of limestone, sandstone, and sand, a bond must be posted before the permit is issued.

Reclamation Standards: The statute explicitly provides considerable discretion to the Department in establishing the content of the mining and reclamation plan by regulation. However, the standards below are drawn directly from the statute, but do not apply to sand, sandstone, and limestone mining.

Water: A suitable drainage system must be established prior to the beginning of surface mining operations.

Topsoil: "Where applicable, suitable soil material shall be used to cover the surface of the regraded and backfilled area...in an amount sufficient to support vegetation."

Grading: Complete backfilling is required, and slopes may not exceed the original contour.

Highwalls: Highwalls must be eliminated.

Toxic wastes: These materials are to be buried under adequate fill.

Revegetation: The operator must indicate the manner in which...spoil will be suitably prepared for revegetation." When planting occurs, the operator must report to the Department.

Inspection: The Department must "make all necessary surveys and inspections" to enforce the statute. Whenever a violation is discovered, the operator is entitled to receive a copy of the inspection report.

Local Role: The Department must publish a notice of permit applications in the locality where the proposed mining will occur. Interested parties are entitled to file written objections.

Bonding: These requirements are not applicable to the mining of sandstone, limestone, and sand.

Amount: The amount is to equal the estimated cost of reclamation, but must be set at between \$600-\$1,000 per acre, with a minimum bond of \$10,000.

Release: Partial release is allowed, but a minimum of \$5,000 or \$250/acre must be retained until planting and revegetation is finished and approved.

Penalties: The permit can be suspended or revoked for cause. Revocation means automatic bond forfeiture. Operation without a valid permit is a misdemeanor punishable by fine or imprisonment, and the operator is also liable for total reclamation costs. If a surface mining operation damages the property of others, the party wronged may sue for triple damages.

WISCONSIN

Summary: The current applicability of the Wisconsin regulatory program is limited, because most active mining operations involve excluded minerals. However, the statute does require exploration and prospecting permits, and considerable exploratory activity is now proceeding in the state. Both the statute and the rules are comparatively detailed and comprehensive, and the Wisconsin regulatory program includes several interesting and unusual features, many of which are discussed below.

An attempt has been made to integrate the hearing process required under this program and other environmental protection programs. An unusual provision allows the Department of Natural Resources to establish minimum qualifications for permit applicants. Extensive provision is made for suits to be filed by individual citizens. There is explicit provision that "(i)f there is a standard under other state or federal statutes or rules which specifically regulates...an activity also regulated under (the statute) the other...shall be the controlling standard." A person mining an area that includes an abandoned site must provide for the reclamation of the abandoned site. The mining and reclamation plan must provide for a "minimization of disturbance to wetlands."

Any person intending to submit an application for a prospecting or mining permit is required to notify the Department prior to collection of data that will be used to support the application. Public notice of this notification allows interested parties to comment on the information they believe is needed in order to review the application. Thereafter, "the Department shall inform the person giving notice of intent to apply for a prospecting or mining permit of the type and quantity of information that it believes to be needed to support an application, and where applicable, the methodology to be used in gathering information." The permit holder is subsequently required to monitor environmental changes, and the Department is authorized to do so concurrently.

Major Minerals: Sand and gravel, stone, iron ore, clay.

Statute: "Metallic Mining Reclamation Act," 1973 (Wisconsin Statutes Annotated, Title XV, Chapter 144).

Rules: Rules have been adopted and periodically amended.

Coverage: Metallic minerals; sand, gravel, and stone are specifically excluded.

Administering Agency: Department of Natural Resources.

Staff: Five.

State Contact: Lawrence J. Lynch.

Mining Permit: A permit or license is required for exploration, prospecting, or mining. The mining permit application must be accompanied by a fee and mining and reclamation plans. A public hearing is required before the application can be approved. Security must be posted prior to granting of a permit.

Reclamation Standards: The standards cited below are derived directly from the statute.

Water: "Management, impoundment, or treatment" is required so as to prevent soil erosion, flooding, damage to agricultural lands or livestock, wild animals, pollution of surface or subsurface waters or damage to public health or safety."

Topsoil: It must be preserved.

Grading: There is no specific grading requirement, but reclamation must restore the area affected by mining either to its original state or to a state that provides "long-term environmental stability."

Toxic Wastes: They must be disposed of in "an environmentally sound manner."

Revegetation: It is required in order to "stabilize disturbed soils and prevent air and water pollution, with the objective of reestablishing a variety of populations of plants and animals indigenous to the area..."

Inspection: The Department has by rule asserted its right to inspect at all reasonable times for the purpose of determining compliance.

Local Role: Hearings on the permit application must be held in the county where the proposed mining activity would occur, and notice of the hearing shall be given...to the regional planning commission for the affected area, to the county, city, village and town within which any part of the affected area lies..." Local government is entitled to form a "local impact committee" to review the application. The operator is obliged to cooperate with such committees, which may be eligible for state funds to cover their expenses, including hiring of staff. The operator must also provide evidence that the proposed activity conforms with applicable zoning ordinances.

Bonding:

Amount: It is to be established by the Department based on the estimated costs of reclamation.

Release: The operator may petition for release, but not less than four years after notifying the Department that reclamation is complete. A hearing is held to determine whether reclamation has been completed in accordance with the plan and the statute. If so, a certificate of completion is issued entitling the operator to release. However, if the mining site involves more than ten acres, the Department must require retention of 20% of the estimated cost of site reclamation for a period of twenty years.

Penalties: In addition to bond forfeiture, the Department can order revocation or cancellation of the permit. Civil penalties are provided for violations of the statute and rules, and more severe penalties, including forfeiture of profits, apply to mining activities undertaken without a permit.

Other Provisions:

Exclusion of Mining: Before issuing a permit, the Department must find that the site is not unsuitable for mining. The criteria of unsuitability involves a reasonable expectation of destruction or irreparable damage to the habitat or endangered species or to unique features of the land.

Long-range or Regional Mining Planning: If the Department finds that the mineral deposit is of such a magnitude that effective reclamation requires comprehensive planning then the Department can require the operator or operators to submit consistent long-term comprehensive plans for the mining and reclamation of the entire area.

WYOMING

Summary: The Wyoming regulatory program is based on the land quality provisions of the state's "Environmental Quality Act," which are much more detailed than they are for air or water resources. The Act is comprehensive in scope, covers coal as well as other minerals, and contains special provisions related to "in situ" mining. The regulations adopted are much more detailed for surface coal mining than for other minerals. Ten very detailed "guidelines" have been prepared which provide assistance to operators in the form of a non-mandatory checklist for preparation of a comprehensive application.

The operator must provide in the application "a general description of the land which shall include as nearly as possible its vegetative cover, the annual rainfall, the general directions and average velocities of the winds, indigenous wildlife, its past and present uses, its present surface waters...and their immediate drainage areas and uses..."

There is no provision for designating areas unsuited for mining, but a permit may be denied if "the proposed mining operation would irreparably harm, destroy, or materially impair any area that has been designated...a rare or uncommon area and having particular historical, archaeological, wildlife, surface geological, botanical or scenic value."

Major Minerals: Sodium compounds, coal, sand and gravel, clay, stone.

Statute: "Environmental Quality Act, 1973" (Title 35, Chapter 11, Wyoming Statutes Annotated).

Rules: As amended and adopted 7/8/80.

Coverage: All minerals.

Administering Agency: Division of Land Quality of the Department of Environmental Quality.

Staff: Twenty.

State Contact: Walter Ackerman.

Mining Permit: Mining operations require a permit and a license, which are valid for the life of the operation. The permit application must include a fee, maps, and a mining and reclamation plan. The license application must be accompanied by an additional fee and a description of the extent of lands to be affected during the first year of operation. This information is used in establishing the amount of security to be filed.

Reclamation Standards: The statute requires adoption of rules and regulations pursuant to reclamation standards stipulated in the statute. Statutory standards include those enumerated below.

Water: The statute requires "prevention of pollution of waters of the state from mining operations, substantial erosion, sedimentation, landslides, accumulation and discharge of acid water, and flooding, both during and after mining and reclamation."

Topsoil: It must be stockpiled, preserved and reused unless the operator can demonstrate the superiority of other methods of reclamation.

Grading: It must "assure the reclamation of the land to a use at least equal to its highest previous use."

Toxic wastes: These materials must be "treated or disposed of in a manner designed to prevent pollution...or threats to...health and safety."

Revegetation: The operator must "assure the development of a vegetation cover consistent with surrounding terrain and the highest prior use..."

Inspection: The Department must inspect as soon as possible after receipt of an annual plan, and shall deliver a copy of the inspection report to the operator.

Local Role: The applicant for a permit must file a copy of his application with the county clerk. Once an application is deemed complete, the operator must publish notice of the application. Any interested person is entitled to file written objections, and a public hearing or informal conference must be held with respect to the application.

Bonding:

Amount: It is to be based on the estimated cost of reclaiming affected land, which "shall be based on the operator's cost estimate...plus the (Department's) estimate of the additional cost to the state of bringing in personnel and equipment should the operator fail or the site be abandoned." For most minerals other than sand and gravel, the minimum bond required is \$10,000, and in no event can it be less than \$200/acre of affected land.

Release: Up to 75% may be released after completion of the reclamation plan, but the remainder must equal at least \$10,000 and be held at least five additional years unless a release is signed by the surface owner and approved by the Department.

Penalties: Fines or imprisonment are provided, in addition to forfeiture of security, for violations of the statute, rules, and permits.

Other Provisions:

Exploration Permits: A special one-year license may be obtained for the purpose of exploration with a bulldozer. Reclamation standards are specified, and security must be posted.

END

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